CHAPTER 2
MAINTENANCE

Periodic Maintenance Chart 2.1-2.2
Pre-Ride Inspection 2.2
Recommended Lubricants and Capacities 2.3
Lubricant and Maintenance Product Numbers 2.4
Lubrication Charts 2.5-2.7
Transmission Lubrication 2.8
Transmission LInkage Adjustment 2.9-2.10
Carburetor Adjustments 2.11-2.14
Fuel System 2.15-2.16
Compression Test 2.17
Battery Maintenance 2.18
Electrical 2.19
Coolant System Maintenance 2.20-2.21
Air Filter Service 2.22
Air Box Sediment Tube Service 2.23
Breather Filter 2.23
Recoil Housing 2.24
Oil Change/Filter 2.25-2.26
Valve Clearance 2.27-2.28
Steering and Toe Allignment 2.29-2.31
Front Hub Maintenance 2.32
Exhaust System Maintenance 2.33
Brake System Service 2.34
Drive Chain Service 2.35-2.36
Suspension Service 2.37
Wheel Removal/Installation 2.38
Tire Inspection 2.39

PERIODIC MAINTENANCE CHART

Inspection, adjustment and lubrication intervals of important components is listed in the following chart. Maintenance intervals are based upon average riding conditions and a vehicle speed of approximately 10 mph. Inspect, clean, lubricate, adjust or replace parts as necessary. **NOTE:** Inspection may reveal the need for replacement parts. Always use genuine Polaris parts.

■**CAUTION:** Due to the nature of these adjustments, it is recommended that service be performed by an authorized Polaris dealer.

▶Vehicles subjected to severe use (operation in wet or dusty areas, low speed heavy load operation, prolonged idle) should be inspected and serviced more frequently. For engine oil, short trip cold weather riding also constitutes severe use. Pay special attention to oil level. A rise in oil level in cold weather can indicate moisture collecting in the oil tank. Change oil immediately if oil level begins to rise.

E Emission Control System Service (California).

PERIODIC MAINTENANCE - ENGINE					
		Frequency (Whichever comes first)			
	Item	Hours	Calendar	Miles (Km)	Remarks
E▶	Engine Oil - Level/Change	100 hrs	6 months	1000 (1600)	Check Level Daily; Break In service at 1 month
E	Oil Filter	100 hrs	6 months	1000 (1600)	Replace with oil change
E▶	Air Filter - Foam Pre-Cleaner	Daily	Daily		Inspect-Clean & oil more often in dirty conditions.
E▶	Air Filter - Main Element	Weekly	Weekly		Inspect - Replace if necessary
▶	Air Box Sediment Tube	-	Daily		Drain deposits whenever visible
▶	Engine Breather Filter	20 hrs	Monthly	200 (320)	Inspect and replace if necessary
▶	Oil Tank Vent Hose	100 hrs	12 months	1000 (1600)	Inspect hose routing /hose condition
E■	Valve Clearance	100 hrs	12 months	1000 (1600)	Inspect/Adjust
E	Idle Speed	As required	As required		Adjust
■	Throttle Cable / ETC Switch	50 hrs	6 months	500 (800)	Inspect -Adjust, Lubricate, Replace if necessary
	Choke (Enricher) Cable	50 hrs	6 months	500 (800)	Inspect -Adjust, Lubricate, Replace if necessary
	Carburetor Float Bowl	50 hrs	6 months	500 (800)	Drain bowl periodically and prior to storage
	Carburetor Air Intake Ducts/Flange	50 hrs	6 months	500 (800)	Inspect all ducts for proper sealing/air leaks
E■	Fuel System	100 hrs	12 months	1000 (1600)	Check for leaks at tank cap, lines, fuel valve, filter, pump & carburetor. Replace lines every 2 years.
E■	Fuel Filter	100 hrs	12 months	1000 (1600)	Replace filter annually
	Coolant/Level Inspection	Daily	Daily		Replace engine coolant every 2 years
	Coolant Strength / Pressure Test System	100 hrs	6 months	1000 (1600)	Inspect strength seasonally; Pressure test system annually
	Radiator	100 hrs	12 months	1000 (1600)	Inspect / Clean external surface
	Cooling System Hoses	100 hrs	12 months	1000 (1600)	Inspect
	Engine Mounts	100 hrs	12 months	1000 (1600)	Inspect
	Drain Recoil Housing	Weekly	Weekly		More often if operating in wet environment
	Exhaust Muffler / Pipe	100 hrs	12 months	1000 (1600)	
ELECTRICAL					
E	Spark Plug	100 hrs	12 months	1000 (1600)	Inspect - Replace if necessary
	Ignition Timing	100 hrs	12 months	1000 (1600)	Inspect
	Battery	20 hrs	Monthly	200 (320)	Check terminals; Clean; Check fluid level
	Headlight Aim	As required	As required		Adjust if Necessary
	Headlamp Inspection	Daily	Daily		Check operation daily; Apply Polaris Dielectric Grease to connector when lamp is replaced
	Tail Lamp Inspection	Daily	Daily		Check Operation Daily; Apply Polaris Dielectric Grease to socket when lamp is replaced

PERIODIC MAINTENANCE CHART, CONT.

CHASSIS					
		Frequency (Whichever comes first)			
	Item	Hours	Calendar	Miles (Km)	Remarks
▶	General Lubrication	50 hrs	3 months	500 (800)	Lubricate All Fittings, Pivots, Cables, Etc.
▶	Front Hubs/Fluid Check	50 hrs	6 months	500 (800)	Check monthly
▶	Front Hubs/Fluid Change	100 hrs	12 months	1000 (1600)	Check monthly
■	Front Hub Spindle Nut Torque	Annually	12 months		Inspect Torque and Locking Fastener and replace if necessary
	Drive Belt	50 hrs	6 months	500 (800)	Inspect - Adjust, Replace if Necessary
	Clutches (Drive And Driven)	100 hrs	12 months	1000 (1600)	Inspect, Clean
▶	Transmission Oil Level	25 hrs	Monthly	250 (400)	Inspect Monthly; Change Annually
	Shift Linkage	50 hrs	6 months	500 (800)	Inspect,Lubricate, Adjust
■	Steering	50 hrs	6 months	500 (800)	Inspect Daily, Lubricate
■	Toe Adjustment	As required	As required		Periodic Inspection, Adjust When Parts are Replaced
▶	Rear Axle	50 hrs	6 months	500 (800)	Inspect Bearings, Grease Fitting
▶	Front Suspension	50 hrs	6 months	500 (800)	Inspect - Lubricate
▶	Rear Suspension	50 hrs	6 months	500 (800)	Inspect - Lubricate
	Drive Chain	50 hrs	6 months	500 (800)	Inspect Daily, Adjust and Lubricate if Needed
	Tires	Pre-ride	Pre-ride		Inspect Daily, Pre-Ride Inspection Item
■	Brake Fluid	200 hrs	24 months	2000 (3200)	Change Every Two Years
▶	Brake Fluid Level	Pre-ride	Pre-ride		Inspect Daily, Pre-Ride Inspection Item
▶	Brake Lever Travel	Pre-ride	Pre-ride		Inspect Daily, Pre-Ride Inspection Item
■	Brake Pad Wear	10 hrs	Monthly	100 (160)	Inspect Periodically
	Output Shaft Bearing	Monthly	Monthly		Grease Monthly
	Brake System	Pre-ride	Pre-ride		Pre-Ride Inspection Item
	Wheels	Pre-ride	Pre-ride		Pre-Ride Inspection Item
	Frame Nuts, Bolts, Fasteners	Pre-ride	Pre-ride		Pre-Ride Inspection Item

PRE-RIDE / DAILY INSPECTION

Perform the following pre-ride inspection daily, and when servicing the vehicle at each scheduled maintenance.

- Tires - check condition and pressures
- Fuel and oil tanks - fill both tanks to their proper level; Do not overfill oil tank
- All brakes - check operation and adjustment
- Throttle - check for free operation and closing
- Headlight/Taillight/Brakelight - check operation of all indicator lights and switches
- Engine stop switch - check for proper function
- Wheels - check for tightness of wheel nuts and axle nuts; check to be sure axle nuts are secured by cotter pins
- Drive chain - condition and slack; refer to drive chain adjustment
- Air cleaner element - check for dirt; clean or replace
- Steering - check for free operation noting any unusual looseness in any area
- Loose parts - visually inspect vehicle for any damaged or loose nuts, bolts or fasteners
- Engine coolant - check for proper level at the recovery bottle

RECOMMENDED LUBRICANTS - QUICK REFERENCE

LUBRICANTS AND MAINTENANCE PRODUCT PART NUMBERS ARE LISTED ON PAGE 2.4. REFER TO SPECIFICATIONS CHAPTER 1 FOR CAPACITY INFORMATION.

Item	Type	Notes	See Pages
Engine Oil	Polaris Premium 4 Synthetic, 0W/40	Add to proper level on dipstick.	2.25-2.26
Transmission	Polaris Synthetic Gear Case Lubricant	Refer to procedures outlined later in this chapter.	2.8
Gear Shift Selector Box	Polaris 0W/40 Synthetic Engine Lubricant or 10W Motor Oil	Oil in selector box should be at the center line of the shift selector plungers. Do not overfill or the selector may hydro-lock.	8.4
Coolant Level	Polaris Premium 60/40 Pre-mixed Antifreeze/ Coolant or a 50/50 mixture high quality antifreeze/ coolant and distilled water	Fill reservoir tank to full line. Add if necessary. If reservoir was empty or extremely low, allow engine and cooling system to cool completely and check level in radiator. Fill to top of filler neck.	2.21
Front Hubs	Premium Demand Drive Hub Fluid	Fill hub at 4:00 or 8:00 position until fluid trickles out. Do not force fluid into hub.	2.32
Brake Fluid	Polaris DOT 3 Brake Fluid	-Fill between “Min” & “Max” indicators on plastic reservoir.	2.34

COLD WEATHER KITS FOR 4 CYCLE ATVS

Oil Tank Cover – PN 287187

Engine Heater – PN 2871507

Oil Tank Heater – PN 2871873

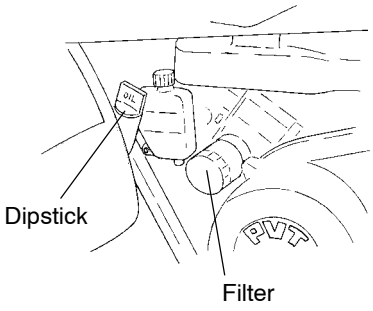
POLARIS PREMIUM LUBRICANT AND MAINTENANCE PRODUCT PART NUMBERS

Part No.	Description
Engine Lubricant	
2870791	Fogging Oil
2871281	Engine Oil (Quart) Premium 4 Synthetic 0-W40 (4-Cycle)
2871567	Engine Oil (16 Gallon) Premium 4 Synthetic 0-W40 (4-Cycle)
Gearcase / Transmission Lubricants	
2871477	Premium Synthetic Gearcase Lubricant (1 Gal.)
2871478	Premium Synthetic Gearcase Lubricant (12 oz.. bottle)
2870465	Oil Pump for Gearcase Oil
2871653	Premium Front Gearcase Fluid (12 oz..)
Grease / Specialized Lubricants	
2871322	Premium All Season Grease (3 oz.. cartridge)
2871423	Premium All Season Grease (14 oz.. cartridge)
2871460	Starter Drive Grease
2871515	Premium U-Joint Lube (3 oz..)
2871551	Premium U-Joint Lube (14 oz..)
2871312	Grease Gun Kit
1350046	CV Joint Grease Pack (30g)
1350047	CV Joint Grease Pack 50g
2871329	Dielectric Grease (Nyogel™)
2871654	Premium Demand Drive Hub Fluid (12 oz..)
Coolant	
2871323	60/40 Coolant Gallon
2871534	60/40 Coolant Quart
Additives / Sealants / Thread Locking Agents / Misc.	
2870585	Loctite™ Primer N, Aerosol, 25g
2871949	Loctite™ Threadlock 242 (50ml.)
2871950	Loctite™ Threadlock 242 (6ml.)
2871951	Loctite™ Threadlock 262 (50ml.)
2871952	Loctite™ Threadlock 262 (6ml.)
2871953	Loctite™ Threadlock 271 (6ml.)
2871954	Loctite™ Threadlock 271 (36ml.)
2870584	Loctite™ RC 680-Retaining Compound (10ml.)
2870587	Loctite™ 518 Gasket Eliminator / Flange Sealant (50ml.)
2871326	Premium Carbon Clean 12 oz..
2870652	Fuel Stabilizer 16 oz..
2871957	Black RTV Silicone Sealer (3 oz.. tube)
2871958	Black RTV Silicone Sealer (11 oz.. cartridge)
8560054	Marine Grade Silicone Sealer (14 oz.. cartridge)
2870990	DOT3 Brake Fluid
2872113	Disc Brake Quiet, Aerosol, (9 oz..)
2871557	Crankcase Sealant, 3-Bond 1215

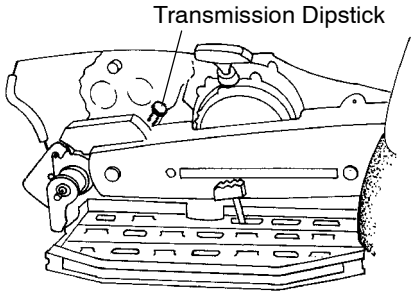
LUBRICATION

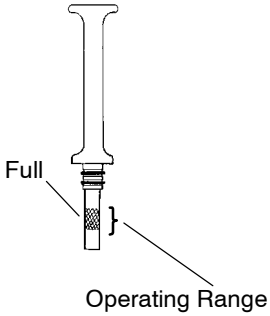
Ill. #	Item	Lube Rec.	Method	Frequency*
1	Engine Oil	Polaris 0W/40 Synthetic	Add oil to proper level.	Change after 1st month, 6 months or 100 hours thereafter; Change more often (25-50 hours) in extremely dirty conditions, or short trip cold weather operation.
2	Transmission	Polaris Synthetic Gear Case Lubricant	Add lube to FULL level on dipstick.	Change annually [2]
3	Brake Fluid	Polaris DOT 3 Brake Fluid	Fill master cylinder reservoirs to 1/4″ (6.4mm) from top, or between indicated lines. See page 2.34.	As required. Change fluid every 2 years.
4	Drive Chain	Polaris Chain Lube or O-Ring chain lube	Apply to chain link plates and rollers.	As required*
5	Middle Chain			
6	Front Chain			

* More often under severe use, such as operated in water or under severe loads.

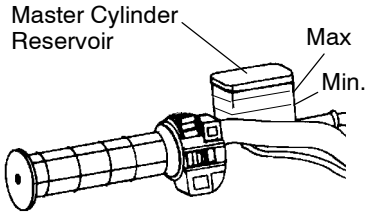


1. Engine Oil and Filter

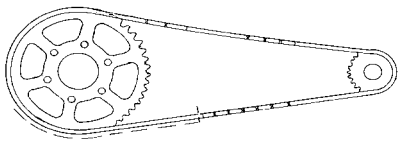




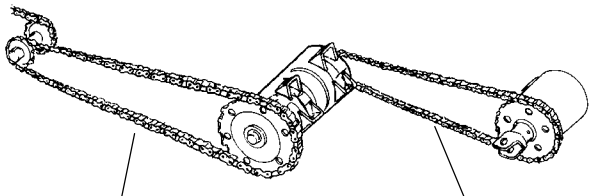
2. Transmission



3. Brake Fluid (Left hand Master Cylinder shown)



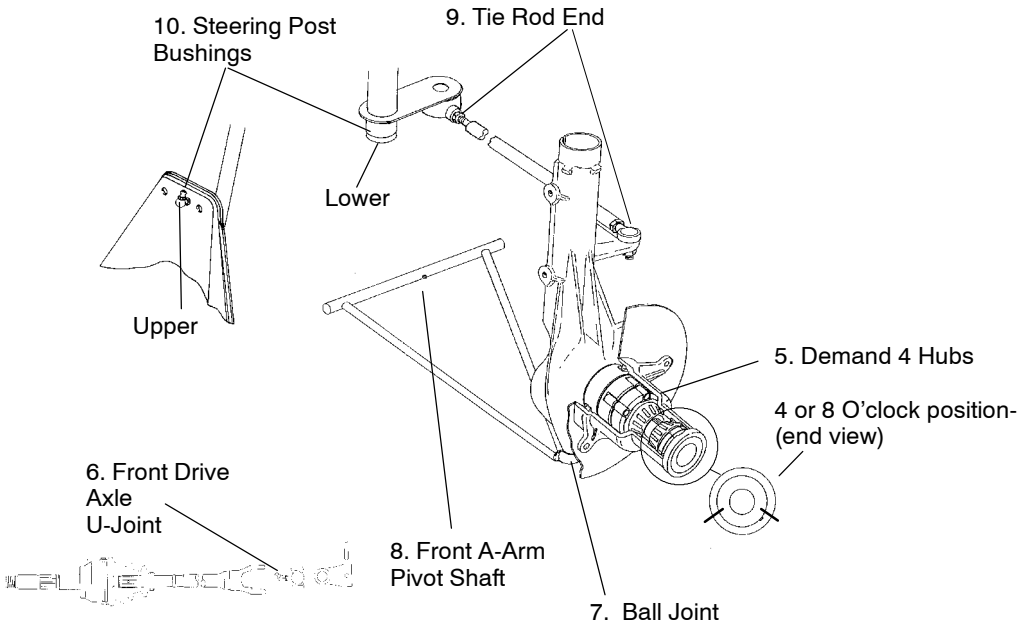
4. Rear Drive Chain



5. Middle Drive Chain

6. Front Drive Chain

LUBRICATION, CONT.



Ill. #	Item	Lube Rec.	Method	Frequency*
5	Demand 4 Hubs	Polaris Demand Drive Hub Fluid or ATF Type F	Remove filler hole screw in hubs. Rotate wheels to 4 or 8 O'clock position. If lubricant is not visible add until it flows from filler hole. Reinstall screw.	Semi-annually [1]
6	Front Drive Axle "U" Joints	Polaris U-Joint Grease [3]	Locate grease fitting and grease with grease gun.	Semi-annually [1]
7	Ball Joint	Polaris All Season Grease [3]	Locate grease fitting on back side of struts and grease with grease gun.	Semi-annually [1]
8	Front A-Arm Pivot Shaft	Polaris All Season Grease [3]	Locate grease fitting on pivot shaft and grease with grease gun.	Semi-annually [1]
9	Tie Rod Ends	Polaris All Season Grease [3]	Lift boot. Clean away dirt and grease. Apply fresh grease by hand and reassemble.	Semi-annually [1]
10	Steering Post Bushings	All Season Grease [3]	Locate fittings on upper and lower steering post and grease with grease gun.	Semi-annually [1]

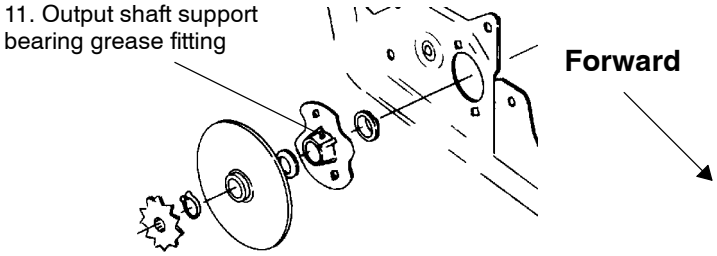
* More often under severe use, such as operated in water or under severe loads.

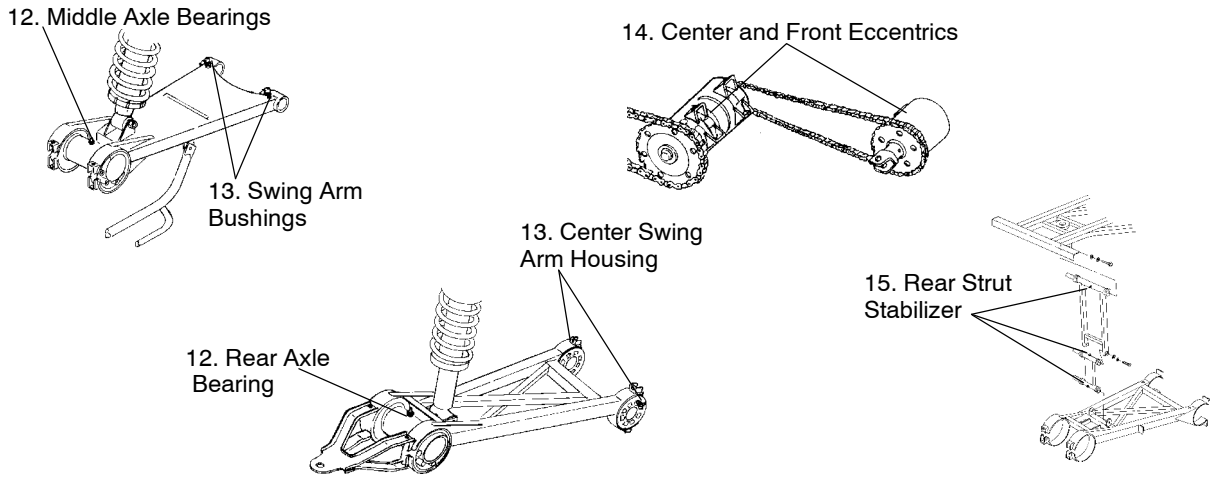
[1] Semi-annually or 50 hours of operation (refer to Maintenance Schedule for additional information)
More often under severe conditions (operating in water or hauling heavy loads)

[2] Annually or 100 hours of operation (refer to Maintenance Schedule for additional information)
More often under severe conditions (operating in water or hauling heavy loads)

[3] Grease conforming to NLGI No. 2, such as Polaris Premium All Season Grease, Conoco Superlube M or Mobilegrease Special

LUBRICATION, CONT.




12. Middle Axle Bearings
13. Swing Arm Bushings
14. Center and Front Eccentrics
13. Center Swing Arm Housing
12. Rear Axle Bearing
15. Rear Strut Stabilizer

Ill. #	Item	Lube Rec.	Method	Frequency*
11	Transmission Output Shaft	Polaris All Season Grease [3]	Locate grease fitting on transmission output shaft and grease with grease gun.	Semi-annually [1]
12	Rear and Middle Axle Bearings	Polaris All Season Grease [3]	Locate grease fitting on eccentric and grease with grease gun.	Semi-annually [1]
13	Swing Arm Bushings and Center Swing Arm Housing	Polaris All Season Grease [3]	Locate grease fitting on swing arm and grease with grease gun.	Semi-annually [1]
14	Chain Adjusters (Center and Front Eccentrics)	Polaris All Season Grease [3]	Locate grease fitting on center eccentric and grease. Locate grease fitting on front eccentric (side opposite chain) and grease.	Semi-annually [1]
15	Rear Strut	Polaris All Season Grease [3]	Locate fitting on rear strut and grease with grease gun.	Semi-annually [1]

* More often under severe use, such as operated in water or under severe loads.

[1] Semi-annually or 50 hours of operation (refer to Maintenance Schedule for additional information)
More often under severe conditions (operating in water or hauling heavy loads)

[2] Annually or 100 hours of operation (refer to Maintenance Schedule for additional information)
More often under severe conditions (operating in water or hauling heavy loads)

[3] Grease conforming to NLGI No. 2, such as Polaris Premium All Season Grease, Conoco Superlube M or Mobilegrease Special

TRANSMISSION LUBRICATION

The transmission lubricant level should be checked and changed in accordance with the maintenance schedule.

- Be sure vehicle is level before proceeding.
- Check vent hose to be sure it is routed properly and unobstructed.
- Follow instructions on following pages to check / change transmission lubricant.

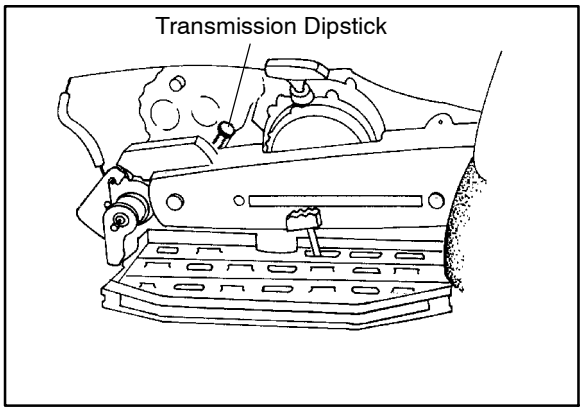
TRANSMISSION SPECIFICATIONS

Specified Lubricant:
Polaris Premium Synthetic Gearcase Lubricant
PN 2871477 (Gallon) PN 2871478 (12 oz..)

Capacity: . . . . . 20 oz. / 592 ml

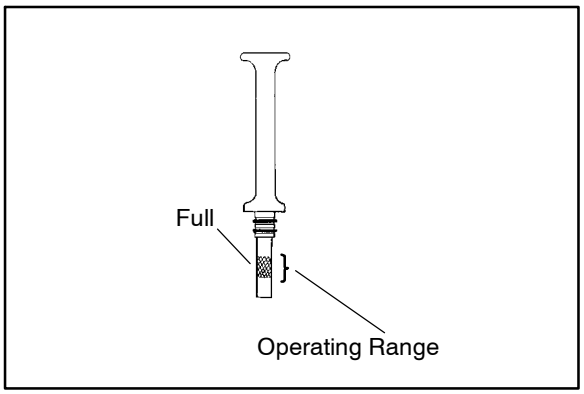
Drain Plug / Fill Plug Torque:

14 ft. lbs. (19.4 Nm)



To check the level:

1. Remove fill dipstick and wipe clean.
2. Reinstall dipstick completely, remove and check the level. Add the proper lubricant as required to bring level into operating range as shown.

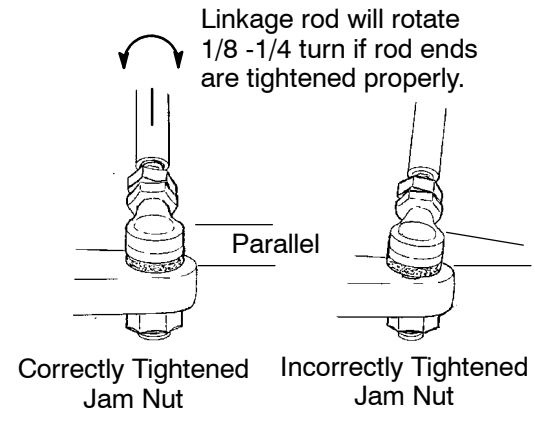


To change lubricant:

1. Remove the drain plug and wipe the magnetic end clean to remove accumulated metallic filings. Catch and discard used oil properly.
2. After the oil has drained completely, install a new sealing washer and install the drain plug. Torque to 14 ft. lbs. (19.3 Nm).
3. Add the proper lubricant through the dipstick hole until the oil level is between the upper and lower limits. Do not overfill.
4. Check for leaks.

TRANSMISSION GEARSHIFT LINKAGE ADJUSTMENT, PRELIMINARY INSPECTION

- If shifting problems are encountered, the transmission linkage can be adjusted.
- Tighten shift linkage rod end jam nuts properly after adjustment. You should be able to rotate the linkage rod between 1/8 and 1/4 turn after both jam nuts are tight.
- The transmission shift linkage should be periodically inspected for wear and parts replaced as required to remove excess play from shift linkage.
- Refer to Transmission chapter for more information.


Linkage rod will rotate 1/8 -1/4 turn if rod ends are tightened properly.
Parallel
Correctly Tightened Jam Nut
Incorrectly Tightened Jam Nut

SHIFT LINKAGE ADJUSTMENT

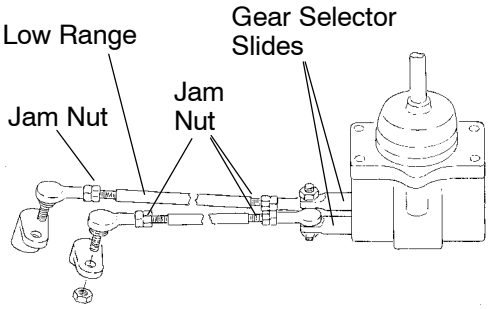
Linkage rod adjustment is necessary when symptoms include:

- No All Wheel Drive light
- Noise on deceleration
- Inability to engage a gear
- Excessive gear clash (noise)
- Shift selectors moving out of desired range

NOTE: When adjusting linkage, always adjust both linkage rods. The adjustment of one rod can prevent proper adjustment of the other rod. Remove necessary components to gain access to shift linkage rod ends (i.e. exhaust heat shield, exhaust pipe, etc.).

1. Inspect shift linkage tie rod ends, clevis pins, and pivot bushings and replace if worn or damaged. Lubricate the tie rod ends with a light aerosol lubricant or grease.
2. Loosen all rod end adjuster jam nuts see Ill. 1.
3. Note orientation of tie rod end studs with stud up or down. Remove both rod end studs from transmission bell cranks.
4. Be sure idle speed is adjusted properly.

NOTE: It is important to disconnect *both* rod ends from the transmission bell cranks. If one linkage rod is incorrectly adjusted, it can affect the adjustment of the other rod.



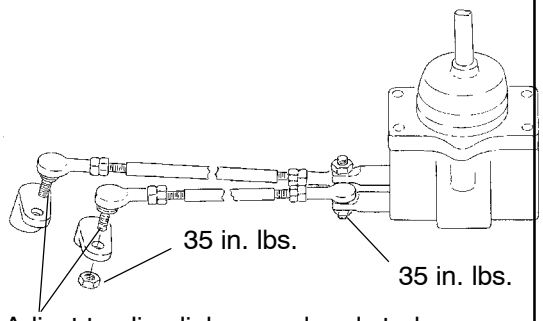
NOTE: Rod end orientation (up or down). Note before disassembly.

Ill. 1

SHIFT LINKAGE ADJUSTMENT, CONT.

5. Place gear selector in neutral. Make sure the transmission bell cranks are engaged in the neutral position detents.

6. Be sure the shift linkage rod ends are firmly attached to the gear selector slides. Adjust the low range (inside) rod so the rod end is centered on the transmission bell crank. Install the lock nut to the rod end and torque to 35 in. lbs.



Adjust to align linkage rod end studs with holes in bellcrank(s).

1998/99 shown.

Ill. 2

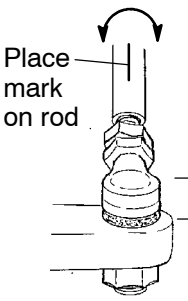
7. Rotate the linkage rod clockwise until resistance is felt. Mark the rod so revolutions can be easily counted. See Ill. 3 at right.

8. Rotate the linkage rod counterclockwise until the same resistance is felt, counting the revolutions as the rod is turned.

9. Turn the rod clockwise again one half of the revolutions counted in Step 9.

10. Tighten the rod end jam nuts securely while holding the rod end. The jam nuts must be tightened with both front and rear rod ends parallel to each other. If jam nuts are properly tightened, the rod should rotate freely 1/4 turn without binding.

11. Repeat steps 7-10 for the High/Reverse rod.



- Rotate rod both directions to find points where resistance is felt.
- Center the rod between the points.
- Hold rod end parallel to mounting surface and tighten jam nut.

Ill. 3

THROTTLE OPERATION

Check for smooth throttle opening and closing in all handlebar positions. Throttle lever operation should be smooth and lever must return freely without binding.

1. Place the gear selector in neutral.
2. Set parking brake.
3. Start the engine and let it idle.
4. Turn handlebars from full right to full left. If idle speed increases at any point in the turning range, inspect throttle cable routing and condition.
5. Replace the throttle cable if worn, kinked, or damaged.

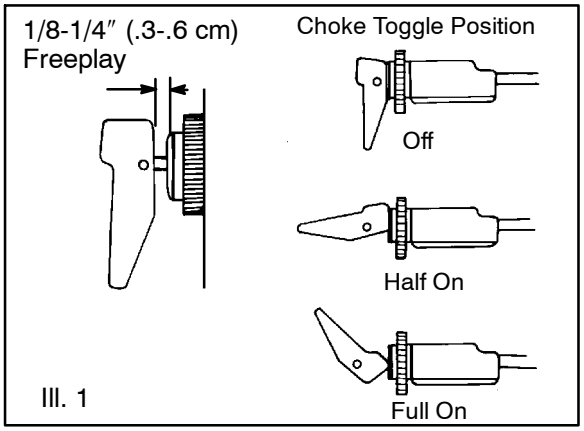
NOTE: Be sure ETC switch plunger is held inward by throttle cable tension.

CHOKE (ENRICHER) ADJUSTMENT

With the choke control toggle flipped to the off position, the choke plunger must be seated on the fuel passage way in the carburetor. If the plunger is not seated on the fuel passage way inside the carburetor (not enough cable freeplay), the engine will flood or run too rich, causing plug fouling and poor performance. (Ill 1.)

If cable slack is excessive, the choke fuel passage will not open far enough, which may cause cold starting difficulty. Also, the half-choke position used for intermittent applications will not function properly.

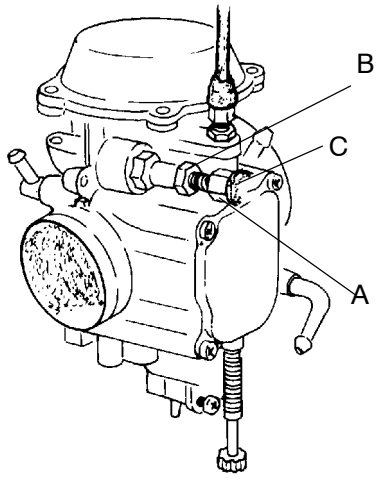
1. Flip choke toggle to off position.
2. Slide boots (C) off choke cable adjuster and lock nut (A). (Ill. 2)
3. Loosen adjustment locknut (A) on cable sleeve on carburetor.



Ill. 1

CHOKE (ENRICHER) ADJUSTMENT, CONT.

4. Turn cable sleeve adjusting nut (B) clockwise on carburetor until 1/4″ (6 mm) or more choke toggle free play is evident.
5. Turn cable sleeve adjusting nut counterclockwise until toggle has zero free play, then rotate it clockwise until 1/8″-1/4″ (3-6 mm) toggle free play is evident.
6. Tighten locknut (A).
7. Slide boots back over cable adjuster sleeve until they touch at the middle point of the sleeve (in-line adjusters) or until seated fully over adjuster.



Ill. 2 **Adjust at carburetor**

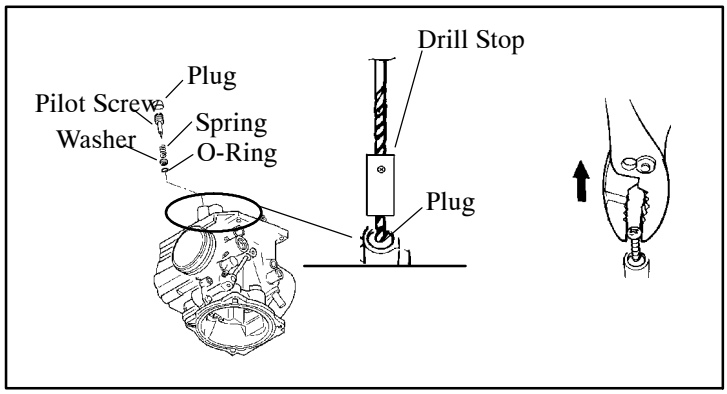
Choke Lever Freeplay -

1/8 - 1/4″ (.3 - .6 cm)

PILOT SCREW ANTI-TAMPER PLUG REMOVAL

NOTE: The pilot screw is pre-set at the factory. The following adjustment procedure should be used after carburetor disassembly and cleaning, or if the pilot screw is replaced. Be sure all engine maintenance items have been performed and are within specifications before adjusting pilot screw. Some models have an anti-tamper plug covering the pilot screw. If pilot screw adjustment is required, remove it following the procedure outlined below.

1. Remove the carburetor.
2. Drain the carburetor bowl and cover all openings to prevent metal shavings from entering.
3. Invert the carburetor and carefully drill out the center of the plug with a 1/8″ or 5/32″ (3 or 4mm) drill bit. Before drilling, set a drill stop on the shank of the drill bit to prevent drilling beyond 3/16″. CAUTION: Be careful not to drill into the pilot screw!
4. Drill the plug at slow drill speeds. Use a self-tapping metal screw and a pliers to remove the plug if it does not rotate out with the drill bit.
5. Turn the screw in until lightly seated. Back out the specified number of turns. This is the pilot screw base setting. Do not tighten the pilot screw forcefully against the seat or the screw and/or seat will be permanently damaged.
6. Refer to pilot screw adjustment procedure.



PILOT SCREW ADJUSTMENT

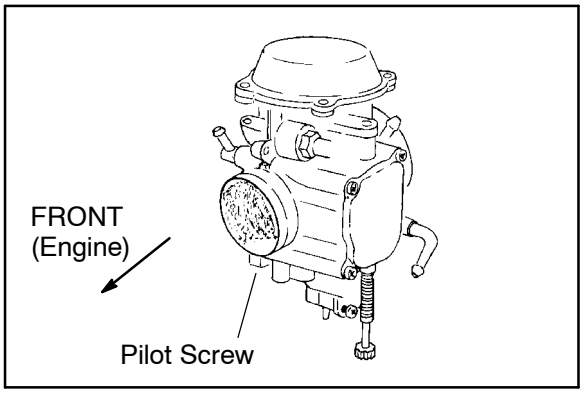
Pilot Screw (Idle Mixture) Adjustment Notes

Do not tighten the pilot screw forcefully against the seat or the screw and/or seat will be permanently damaged. Start engine and warm it up to operating temperature (about 10 minutes). This is a very important step.

1. Turn pilot screw in (clockwise) until *lightly* seated. Turn screw out the specified number of turns.

Pilot Screw Adjustment:
2.0 Turns

2. Connect an accurate tachometer that will read in increments of + or – 50 RPM such as the PET 2100DX (P/N 8712100DX) or the PET 2500 (P/N 8712500).
3. Set idle speed to 1200 RPM. Always check throttle cable freeplay after adjusting idle speed and adjust if necessary.
4. Slowly turn mixture screw clockwise using the pilot screw wrench until RPM begins to decrease by 50 RPM or greater.
5. Slowly turn mixture screw counterclockwise until idle speed increases to maximum RPM. Continue turning counterclockwise until idle RPM begins to drop.
6. Center the pilot screw between the points in step 5 and 6.
7. Re adjust idle speed if not within specification.

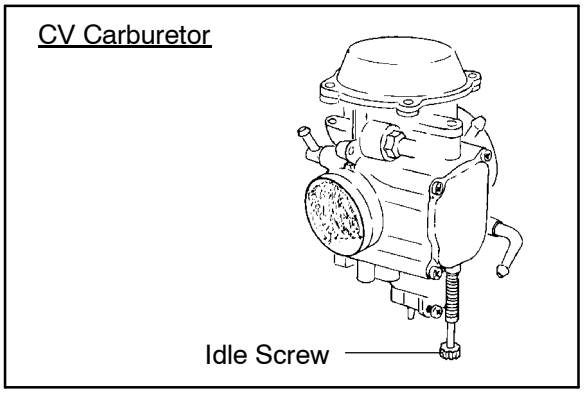


IDLE SPEED ADJUSTMENT

1. Start engine and warm it up thoroughly.
2. Adjust idle speed by turning the idle adjustment screw in (clockwise) to increase or out (counterclockwise) to decrease RPM. (Refer to Ill. at right).

NOTE: Adjusting the idle speed affects throttle cable freeplay and electronic throttle control (ETC) adjustment. Always check throttle cable freeplay after adjusting idle speed and adjust if necessary.

Idle Speed:
1200 +/- 200 RPM



THROTTLE CABLE / ELECTRONIC THROTTLE CONTROL (ETC SWITCH) ADJUSTMENT

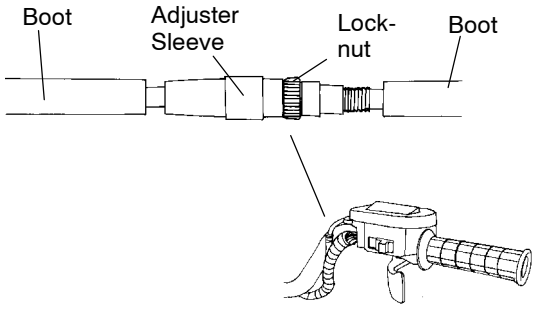
1. Slide boot off throttle cable adjuster and jam nut.
2. Place shift selector in neutral and set parking brake.
3. Start engine and set idle to specified RPM, then shut off engine.

NOTE: Be sure the engine is at operating temperature. See Idle Speed Adjustment.

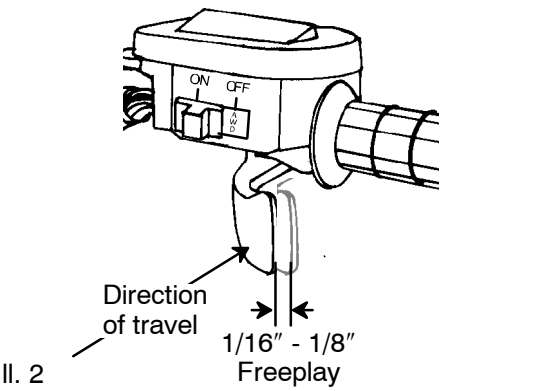
4. Loosen lock nut on in-line cable adjuster (Ill. 1).
5. Turn adjuster until 1/16″ to 1/8″ freeplay is achieved at thumb lever. (Ill. 2). While making adjustment, quickly actuate the thumb lever several times.

NOTE: Be sure ETC switch plunger is held inward by throttle cable tension.

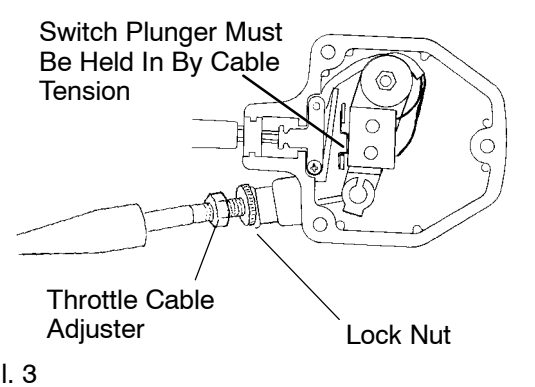
6. Tighten lock nut securely and slide boot completely in place to ensure a water-tight seal.
7. Turn handlebars from left to right through the entire turning range. If idle speed increases, check for proper cable routing. If cable is routed properly and in good condition, repeat adjustment procedure.



Ill. 1



Ill. 2



Ill. 3

FUEL SYSTEM

⚠ WARNING

Gasoline is extremely flammable and explosive under certain conditions.

- Always stop the engine and refuel outdoors or in a well ventilated area.
- Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- Do not overfill the tank. Do not fill the tank neck.
- If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.
- If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
- Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.
- Never drain the float bowl when the engine is hot. Severe burns may result.

FUEL LINES

1. Check fuel lines for signs of wear, deterioration, damage or leakage. Replace if necessary.
2. Be sure fuel lines are routed properly and secured with cable ties. **CAUTION:** Make sure lines are not kinked or pinched.
3. Replace all fuel lines every two years.

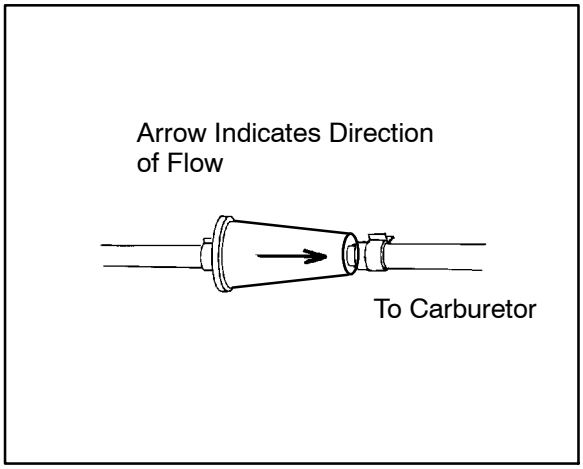
VENT LINES

1. Check fuel tank, oil tank, carburetor, battery and transmission vent lines for signs of wear, deterioration, damage or leakage. Replace every two years.
2. Be sure vent lines are routed properly and secured with cable ties. **CAUTION:** Make sure lines are not kinked or pinched.

FUEL FILTER

The fuel filter should be replaced in accordance with the Periodic Maintenance Chart or whenever sediment is visible in the filter.

1. Shut off fuel supply at fuel valve.
2. Remove line clamps at both ends of the filter.
3. Remove fuel lines from filter.
4. Install new filter and clamps onto fuel lines with arrow pointed in direction of fuel flow.
5. Install clamps on fuel line.
6. Turn fuel valve ON.
7. Start engine and inspect for leaks.



8. Reinstall fuel tank.

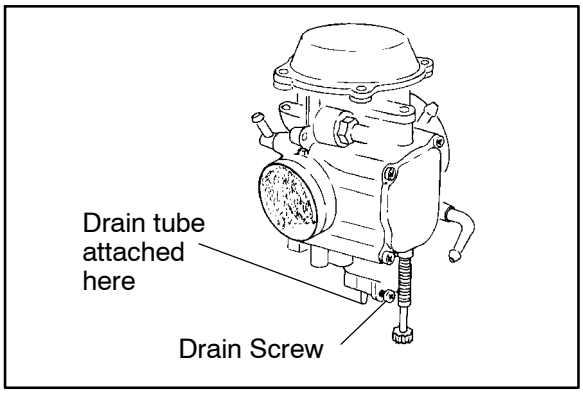
CARBURETOR DRAINING

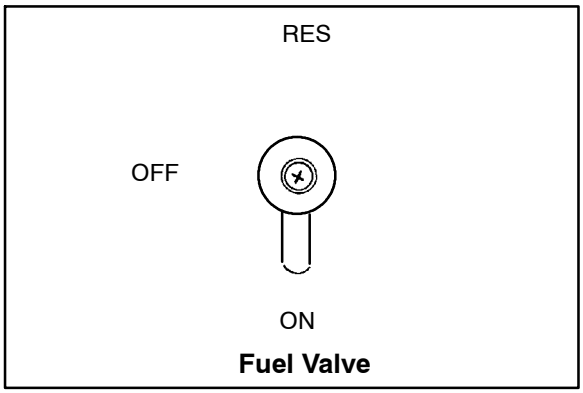
The carburetor float bowl should be drained periodically to remove moisture or sediment from the bowl, or before extended periods of storage.

NOTE: The bowl drain screw is located on the bottom left side of the float bowl.

1. Turn fuel valve to the off position.
2. Place a clean container beneath the bowl drain spigot or bowl drain hose.
3. Turn drain screw out two turns and allow fuel in the float bowl and fuel line to drain completely.
4. Inspect the drained fuel for water or sediment.
5. Tighten drain screw.
6. Turn fuel valve to “on”.
7. Start machine and check for leaks.

NOTE: If there is a tube attached, it must be replaced as this will effect engine performance.





Fuel Valve

COMPRESSION TEST

NOTE: 4-Stroke engines are equipped with an automatic decompressor. Compression readings will vary in proportion to cranking speed during the test. Average compression (measured) is about 50-90 psi during a compression test.

Smooth idle generally indicates good compression. Low engine compression is rarely a factor in running condition problems above idle speed. Abnormally high compression can be caused by a decompressor malfunction, or worn or damaged exhaust cam lobes. Inspect camshaft and automatic decompression mechanism if compression is abnormally high.

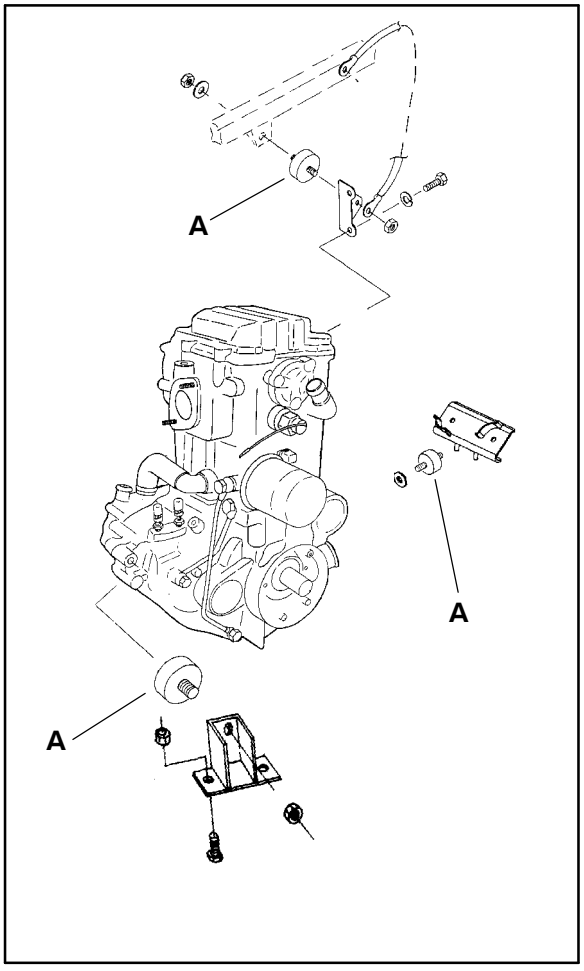
A cylinder leakage test is the best indication of engine condition on models with automatic decompression. Follow manufacturer's instructions to perform a cylinder leakage test. (Never use high pressure leakage tester as crankshaft seals may dislodge and leak).

Cylinder Compression
Standard 50-90 PSI

Cylinder Leakage
Service Limit 10 %
(Inspect for cause if leakage exceeds 10%)

ENGINE MOUNTS

Inspect rubber engine mounts (A) for cracks or damage.



FASTENER TORQUE - ENGINE

Check engine fasteners and ensure they are tight.

BATTERY MAINTENANCE

⚠ WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing. Antidote:

External: Flush with water.

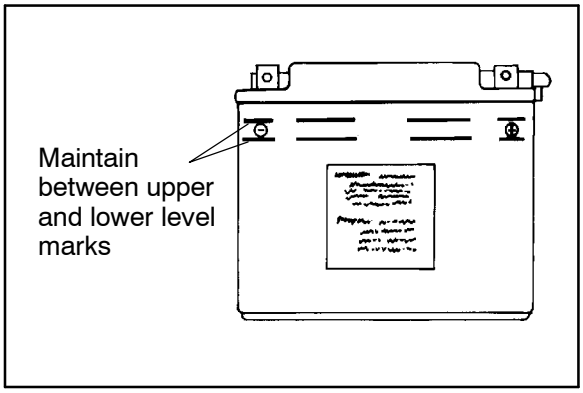
Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

The battery is located under the left rear fender.

Inspect the battery fluid level. When the battery fluid nears the lower level, the battery should be removed and distilled water should be added to the upper level line. To remove the battery:



1. Disconnect holder strap and remove cover.
2. Disconnect battery negative (-) (black) cable first, followed by the positive (+) (red) cable.

⚠ CAUTION

Whenever removing or reinstalling the battery, disconnect the negative (black) cable first and reinstall the negative cable last!

3. Disconnect the vent hose.
4. Remove the battery.
5. Remove the filler caps and add *distilled water only* as needed to bring each cell to the proper level. Do not overfill the battery. Fully recharge after refilling.

⚠ To refill use only distilled water. Tap water contains minerals which are harmful to a battery.

⚠ Do not allow cleaning solution or tap water to enter the battery. It will shorten the life of the battery.

6. Reinstall the battery caps.
7. Clean battery cables and terminals with a stiff wire brush. Corrosion can be removed using a solution of one cup water and one tablespoon baking soda. Rinse well with clean water and dry thoroughly.
8. Reinstall battery, attaching positive (+) (red) cable first and then the negative (-) (black) cable.
9. Reattach vent hose making sure it is properly routed and not kinked or pinched.
10. Coat terminals and bolt threads with Polaris dielectric grease.
11. Reinstall battery cover and holder strap.

NOTE: **New Battery:** Battery must be fully charged before use or battery life will be significantly reduced 10-30% of batterys' full potential.

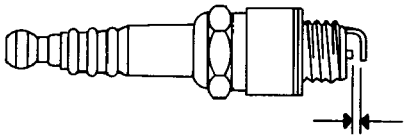
SPARK PLUG

1. Remove spark plug high tension lead. Clean plug area so no dirt and debris can fall into engine when plug is removed.
2. Remove spark plug.
3. Inspect electrodes for wear and carbon buildup. Look for a sharp outer edge with no rounding or erosion of the electrodes.
4. Clean with electrical contact cleaner or a glass bead spark plug cleaner only. **CAUTION:** A wire brush or coated abrasive should not be used.
5. Measure gap with a wire gauge. Refer to specifications for proper spark plug type and gap. Adjust gap if necessary by bending the side electrode carefully.
6. If necessary, replace spark plug with proper type. **CAUTION:** Severe engine damage may occur if the incorrect spark plug is used.
7. Apply a small amount of anti-seize compound to the spark plug threads.
8. Install spark plug and torque to 14 ft. lbs.

Recommended Spark Plug:

Refer to Specifications

Spark Plug Torque: **14 Ft. Lbs. (19 Nm)**



Spark Plug Gap

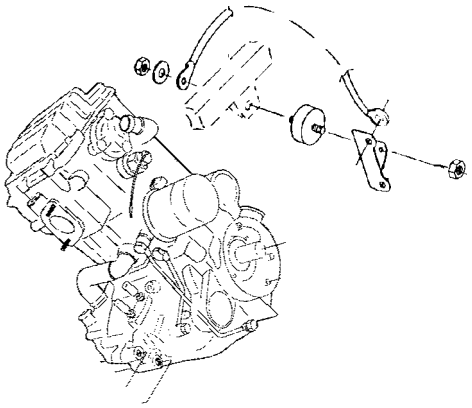
.024 - .028″ (.6 - .7 mm)

IGNITION TIMING

Refer to Electrical chapter for ignition timing procedure.

Engine-To-Frame Ground

Inspect engine-to-frame ground cable connection. Be sure it is clean and tight.



LIQUID COOLING SYSTEM OVERVIEW

The engine coolant level is controlled or maintained by the recovery system. The recovery system components are the recovery bottle, radiator filler neck, radiator pressure cap and connecting hose.

As coolant operating temperature increases, the expanding (heated) excess coolant is forced out of the radiator past the pressure cap and into the recovery bottle. As engine coolant temperature decreases the contracting (cooled) coolant is drawn back up from the tank past the pressure cap and into the radiator.

- Some coolant level drop on new machines is normal as the system is purging itself of trapped air. Observe coolant levels often during the break-in period.
- Overheating of engine could occur if air is not fully purged from system.
- Polaris Premium 60/40 is already premixed and ready to use. Do not dilute with water.

COOLANT STRENGTH / TYPE

Test the strength of the coolant using an antifreeze hydrometer.

- A 50/50 or 60/40 mixture of antifreeze and distilled water will provide the optimum cooling, corrosion protection, and antifreeze protection.
- Do not use tap water, straight antifreeze, or straight water in the system. Tap water contains minerals and impurities which build up in the system.
- Straight water or antifreeze may cause the system to freeze, corrode, or overheat.

Antifreeze Hydrometer

Polaris 60/40 Anti-Freeze / Coolant

PN 2871323

COOLING SYSTEM HOSES

1. Inspect all hoses for cracks, deterioration, abrasion or leaks. Replace if necessary.
2. Check tightness of all hose clamps.

CAUTION: Do not over-tighten hose clamps at radiator, or radiator fitting may distort, causing a restriction to coolant flow. Radiator hose clamp torque is 36 inch lbs.

RADIATOR

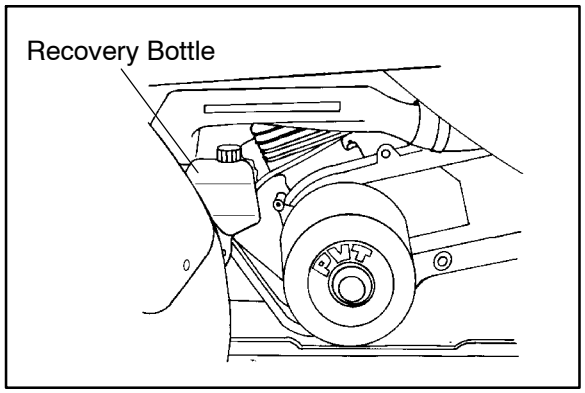
1. Check radiator air passages for restrictions or damage.
2. Carefully straighten any bent radiator fins.
3. Remove any obstructions with compressed air or low pressure water.

COOLING SYSTEM PRESSURE TEST

Refer to page 3.6 for pressure test procedure.

COOLANT LEVEL INSPECTION

The recovery bottle, located on the left side of the machine, must be maintained between the minimum and maximum levels indicated on the recovery bottle.



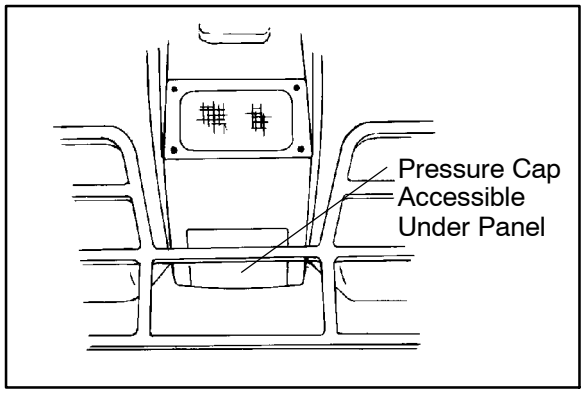
With the engine at operating temperature, the coolant level should be between the upper and lower marks on the coolant reservoir. If not:

1. Remove reservoir cap. Inner splash cap vent hole must be clear and open.
2. Fill reservoir to upper mark with Polaris Premium 60/40 Anti Freeze / Coolant or 50/50 or 60/40 mixture of antifreeze and distilled water as required for freeze protection in your area.
3. Reinstall cap.

NOTE: If overheating is evident, allow system to cool completely and check coolant level in the radiator and inspect for signs of trapped air in system.

RADIATOR COOLANT LEVEL INSPECTION

NOTE: This procedure is only required if the cooling system has been drained for maintenance and/or repair. However, if the recovery bottle has run dry, or if overheating is evident, the level in the radiator should be inspected and coolant added if necessary.



⚠ **WARNING** Never remove the pressure cap when the engine is warm or hot. Escaping steam can cause severe burns. The engine must be cool before removing the pressure cap.

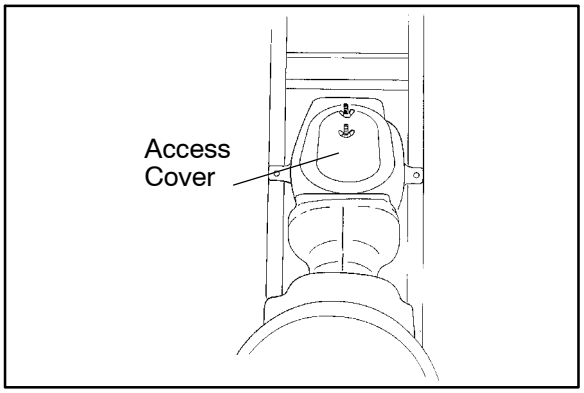
NOTE: Use of a non-standard pressure cap will not allow the recovery system to function properly.

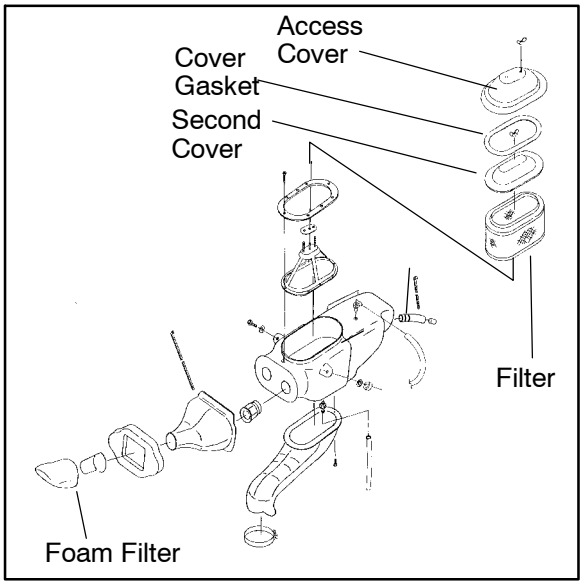
To access the radiator pressure cap:

- To access the pressure cap, remove the access cover on the front of the ATV just below the oil cap. Using a flat, stubby screwdriver loosen the screw 1/4 turn and pull the cover forward and up to remove.

AIR FILTER SERVICE

1. Release seat latch and lift up on the rear of the seat.
2. Pull the seat back and free the tab from front cab.
3. Remove the two wing nuts and washers securing the air filter access cover.
4. Remove the cover. Inspect the gasket. It should adhere tightly to the cover and seal all the way around.
5. Remove the wing nut and washer securing the second cover. The cover should be straight and not distorted.
6. Remove main filter and discard.
7. Install new main filter. **NOTE:** Apply a small amount of general purpose grease to the sealing edges of the filter before installing.





Cleaning the Main Filter

Important:

It is advisable to replace the filter when it is dirty. However, in a new filter is not immediately available, it is permissible to clean the main filter if you observe the following practices.

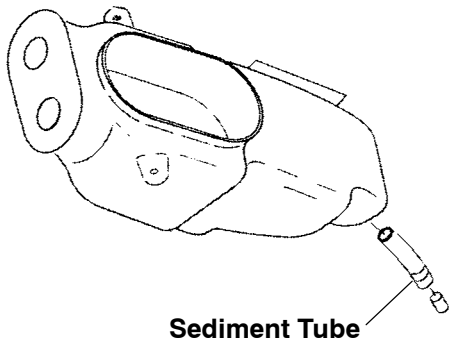
1. **Never** immerse the filter in water since dirt can be transferred to the clean air side of the filter. In addition, the filtering ability of the treated paper element will be significantly reduced.
2. If compressed air is used **never** exceed a pressure of 40 PSI. Always use a dispersion type nozzle to prevent filter damage and clean from the inside to the outside.

AIR BOX SEDIMENT TUBE

Periodically check the air box drain tube located toward the rear of the machine. Drain whenever deposits are visible in the clear tube.

NOTE: The sediment tube will require more frequent service if the vehicle is operated in wet conditions or at high throttle openings for extended periods.

1. Remove drain plug from end of sediment tube.
2. Drain tube.
3. Reinstall drain plug.



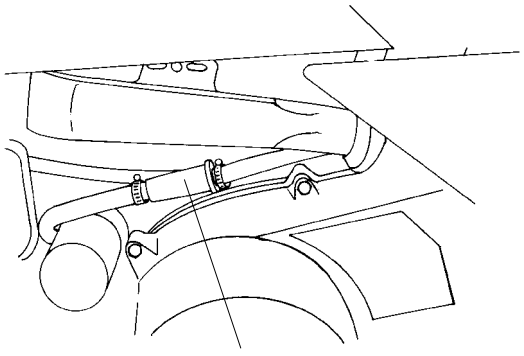
BREATHER FILTER INSPECTION

Four cycle ATV engines are equipped with a breather filter. The in-line filter is similar in appearance to a fuel filter, and is visible on the left side (Location A).

1. In-line breather filters should be installed with the arrow pointing toward the engine (away from the air box).

NOTE: In-line breather filter service life is extended when the foam air box pre-filter is in place and maintained properly. Never operate the engine without the pre-filter.

Typical Breather Filter Location



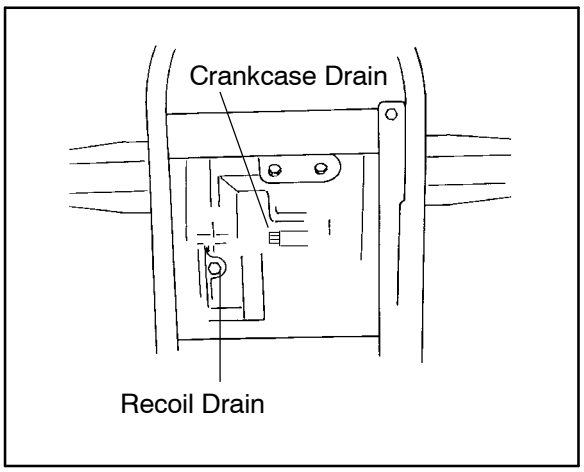
In-Line Breather Filter
Location A

BREATHER HOSE

1. Be sure breather line is routed properly and secured in place. **CAUTION:** Make sure lines are not kinked or pinched.

RECOIL HOUSING

- Drain the housing periodically to remove moisture.
- Drain the recoil housing after operating the ATV in very wet conditions. This should also be done before storing the ATV. The drain screw is located at the bottom of the recoil housing. Remove the screw with a 10mm wrench. Reinstall screw once housing has been drained.
- **CAUTION:** Make sure the manual start handle is fully seated on the recoil housing, especially when travelling in wet areas. If it is not sealed properly, water may enter the recoil housing and damage components.
- Water will enter the recoil housing if the starter handle is disengaged from the rope guide when under water.
- After travelling in wet areas the recoil housing and starter should always be drained completely by removing the recoil.
- Do not open the crankcase drain unless the engine has ingested water. Some engine oil will be lost if crankcase drain is opened.
- If recoil handle seal has been damaged, the handle shopuld be replaced.

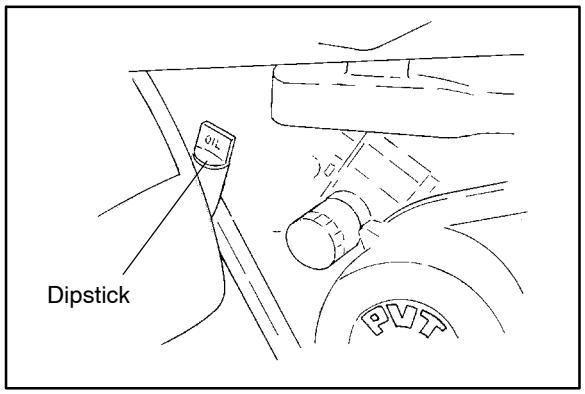


ENGINE OIL LEVEL

The oil tank is located on the left side of the vehicle. To check the oil level:

1. Set machine on a level surface.
2. Start and run engine for 20-30 seconds. This will return oil to its true level in the oil tank. About a cup of oil will remain in the crankcase.
3. Stop engine, remove dipstick and wipe dry with a clean cloth.
4. Reinstall dipstick, screwing into place.

NOTE: The dipstick must be screwed completely in to ensure accurate measurement.



5. Remove dipstick and check to see that the oil level is in the normal range. Add oil as indicated by the level on the dipstick. Do not overfill.

NOTE: Rising oil level between checks in cool weather driving, can indicate moisture collecting in the oil reservoir. If the oil level is over the full mark, change the oil.

Maintain Oil Level In Normal Range

Screw in completely to check

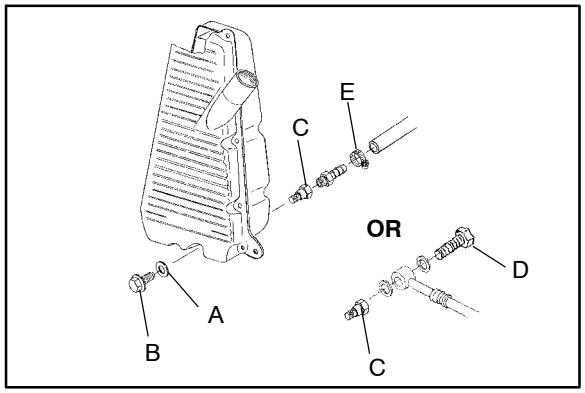
OIL AND FILTER CHANGE

1. Place vehicle on a level surface.
2. Run engine two to three minutes until warm. Stop engine.
3. Clean area around drain plug (B) at bottom of oil tank.
4. Place a drain pan beneath oil tank and remove drain plug. **CAUTION:** Oil may be hot. Do not allow hot oil to come into contact with skin as serious burns may result.
5. Allow oil to drain completely.
6. Replace sealing washer (A) on drain plug. **NOTE:** The sealing surfaces on drain plug and oil tank should be clean and free of burrs, nicks or scratches.
7. Reinstall drain plug and torque to 14 ft. lbs. (1.9 kgm).
8. Loosen clamp (E) or bolt (D).
9. Remove oil hose from screen fitting (C) on bottom of oil tank.
10. Remove screen fitting (C).
11. Clean screen thoroughly.
12. Apply Loctite™ PST 505 or an equivalent pipe thread sealant or PTFE sealant tape to clean, oil free threads of fitting.
13. Install fitting and torque to 14-17 ft./lbs..
14. Install oil hose on fitting and tighten clamp to 25 inch/lbs.

Recommended Engine Oil:

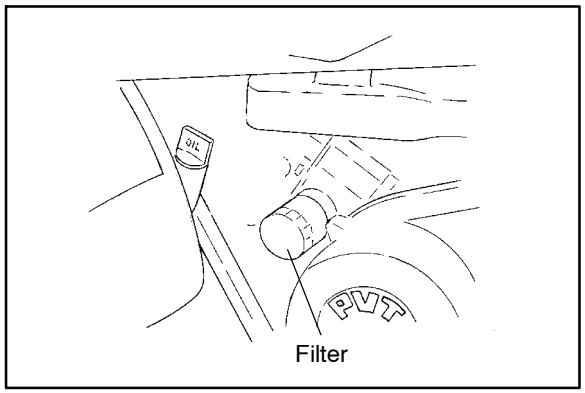
Polaris Premium 4 All Season Synthetic, 0W/40, PN 2871281

Ambient Temperature Range: -40° F to 120° F



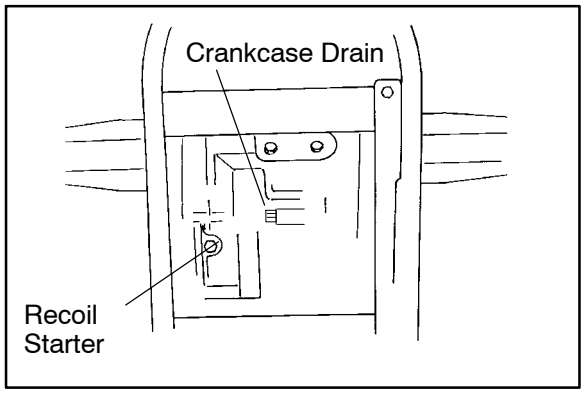
OIL AND FILTER CHANGE, CONT.

15. Place shop towels beneath oil filter. Using an oil filter wrench, turn filter counterclockwise to remove.
16. Using a clean dry cloth, clean filter sealing surface on crankcase.
17. Lubricate O-ring on new filter with a film of engine oil. Check to make sure the O-ring is in good condition.
18. Install new filter and turn by hand until filter gasket contacts the sealing surface, then turn and additional 1/2 turn.
19. Approximately 1 cup of engine oil will remain in the crankcase. To drain, remove drain plug found on lower right side of crankcase.



NOTE: The sealing surfaces on the drain plug and crankcase should be clean and free of burrs, nicks or scratches.

20. Reinstall drain plug.
21. Remove dipstick and fill tank with 2 quarts (1.9 l) of Polaris Premium 4 synthetic oil.
22. Place gear selector in neutral and set parking brake.
23. **Prime oil pump using procedure below**. Stop the engine and inspect for leaks.
24. Re-check the oil level on the dipstick and add oil as necessary to bring the level to the upper mark on the dipstick.
25. Dispose of used filter and oil properly.

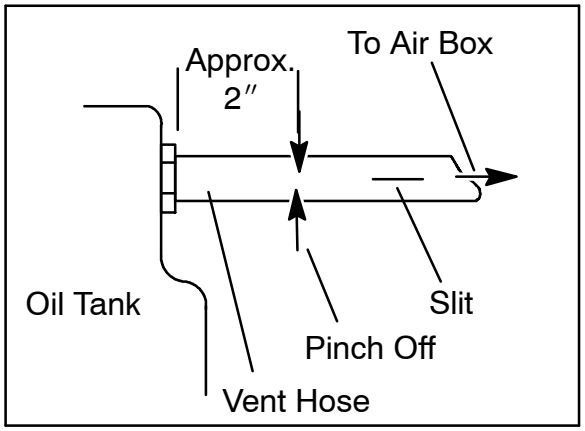


Engine Sump Drain Plug - Bottom View

OIL PUMP PRIMING PROCEDURE

NOTE: This priming procedure must be performed whenever the oil hose connection between the oil tank and pump inlet has been disconnected.

1. Clamp or pinch off vent line approximately 2″ from oil tank to avoid the end of oil tank vent fitting, and the vent line's pressure relief slit
2. Run engine for 45-60 seconds.
3. Remove the vent line clamp. The oil pump will now be properly primed and ready for field operation.



Oil Tank Drain Plug Torque:
14 ft. lbs. (19 Nm)

Crankcase Drain Plug Torque:
14 ft. lbs. (19 Nm)

Oil Filter Torque:
Turn by hand until filter gasket contacts sealing surface, then turn an additional 1/2 turn

Oil Filter Wrench:
Snap On™ PN YA997 or 2 1/2 inch

Oil Tank Screen Fitting Torque:
14-17 ft. lbs. (19 Nm)

VALVE CLEARANCE

Inspect and adjust valve clearance while the engine is cold and the piston positioned at Top Dead Center (TDC) on compression stroke.

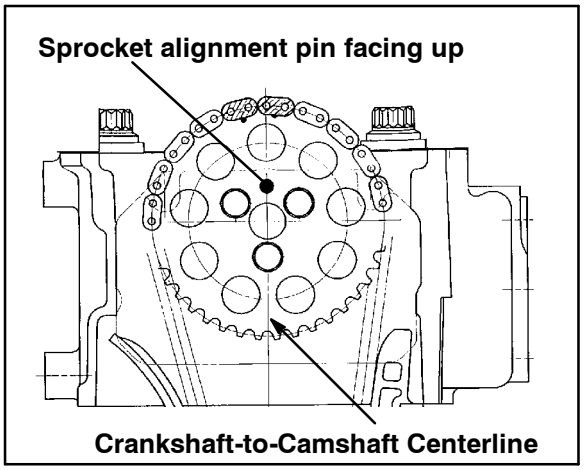
1. Remove the seat.
2. Remove body panels and fuel tank as necessary to gain access to valve cover.
3. Remove the spark plug high tension lead and remove the spark plug. **CAUTION:** Place a clean shop towel into the spark plug cavity to prevent dirt from entering.
4. Remove rocker cover bolts, cover and gasket.

   NOTE: It may be necessary to tap cover lightly with a soft-faced hammer to loosen it from the cylinder head.
5. Remove timing inspection plug from recoil housing.

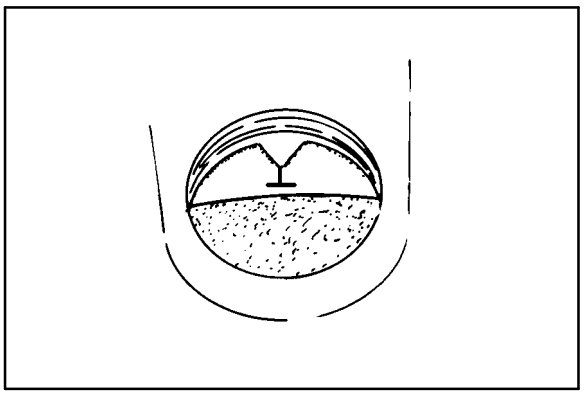
CAUTION: Failure to position the crankshaft at TDC on compression stroke will result in improper valve adjustment.

6. Rotate engine slowly with recoil rope, watching the intake valve(s) open and close.

NOTE: At this point watch the camshaft sprocket locating pin and slowly rotate engine until locating pin is facing upward, directly in line with the crankshaft to camshaft center line as shown. The camshaft lobes should be pointing downward.



7. Verify accurate TDC positioning by observing the “T” mark aligned with the pointer in the timing inspection hole. In this position there should be clearance on all valves.



INTAKE VALVE CLEARANCE ADJUSTMENT

1. Insert a .006″ (.15mm) feeler gauge between end of intake valve stem and clearance adjuster screw.
2. Using a 10 mm wrench and a screwdriver, loosen adjuster lock nut and turn adjusting screw until there is a slight drag on the feeler gauge.
3. Hold adjuster screw and tighten adjuster lock nut securely.
4. Re-check the valve clearance.
5. Repeat adjustment procedure if necessary until clearance is correct with locknut secured.
6. Repeat this step for the other intake valve.

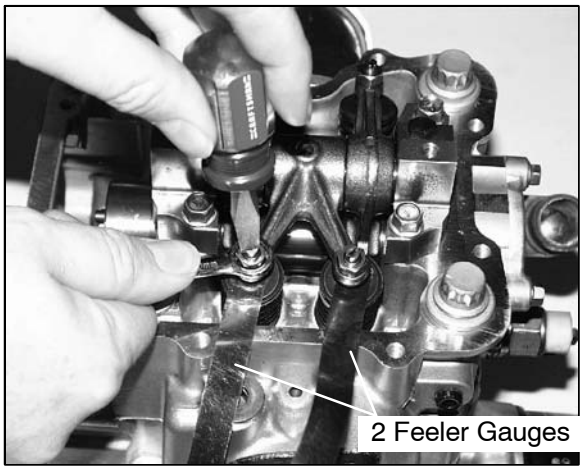
INTAKE VALVE CLEARANCE
.006″ (.15 mm)

EXHAUST VALVE CLEARANCE ADJUSTMENT

NOTE: The exhaust valves share a common rocker arm, and must be adjusted using two feeler gauges.

1. Insert .006 feeler gauge(s) between end of exhaust valve stem and adjuster screw(s).
2. Loosen locknut(s) and turn adjuster screw(s) until there is a slight drag on feeler gauge(s). **NOTE:** Both feeler gauges should remain inserted during adjustment of each valve.

EXHAUST VALVE CLEARANCE
.006″ (.15 mm)



3. When clearance is correct, hold adjuster screw and tighten locknut securely
4. Re-check the valve clearance.
5. Repeat adjustment procedure if necessary until clearance is correct with locknut secured.

STEERING

The steering components should be checked periodically for loose fasteners, worn tie rod ends, and damage. Also check to make sure all cotter pins are in place. If cotter pins are removed, they must not be re-used. Always use new cotter pins.

Replace any worn or damaged steering components. Steering should move freely through entire range of travel without binding. Check routing of all cables, hoses, and wiring to be sure the steering mechanism is not restricted or limited. **NOTE:** Whenever steering components are replaced, check front end alignment. Use only genuine Polaris parts.

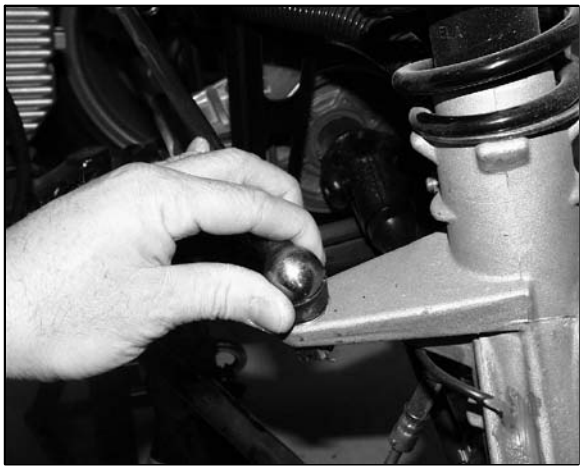
⚠ WARNING

Due to the critical nature of the procedures outlined in this chapter, Polaris recommends steering component repair and adjustment be performed by an authorized Polaris Dealer. Only a qualified technician should replace worn or damaged steering parts. Use only genuine Polaris replacement parts.

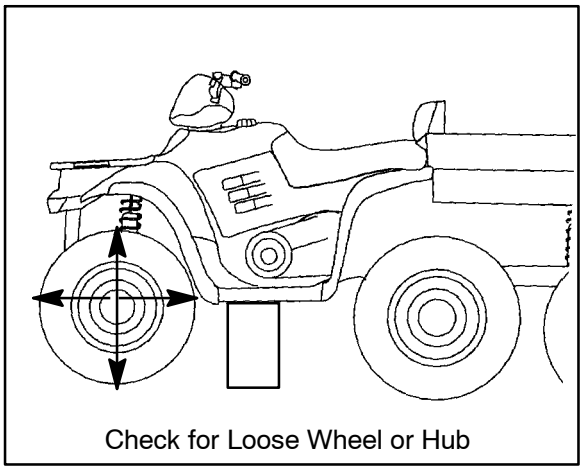
One of two methods can be used to measure toe alignment. The string method and the chalk method. If adjustment is required, refer to following pages for procedure.

TIE ROD END / STEERING INSPECTION

- To check for play in the tie rod end, grasp the steering tie rod, pull in all directions feeling for movement.
- Repeat inspection for inner tie rod end (on steering post).
- Replace any worn steering components. Steering should move freely through entire range of travel without binding.



- Elevate front end of machine so front wheels are off the ground. Check for any looseness in front hub / wheel assembly by grasping the tire firmly at top and bottom first, and then at front and rear. Try to move the wheel and hub by pushing inward and pulling outward.
- If abnormal movement is detected, inspect the hub and wheel assembly to determine the cause (loose wheel nuts or loose front hub nut).
- Refer to the Body/Steering or Final Drive chapter for more information.



Check for Loose Wheel or Hub

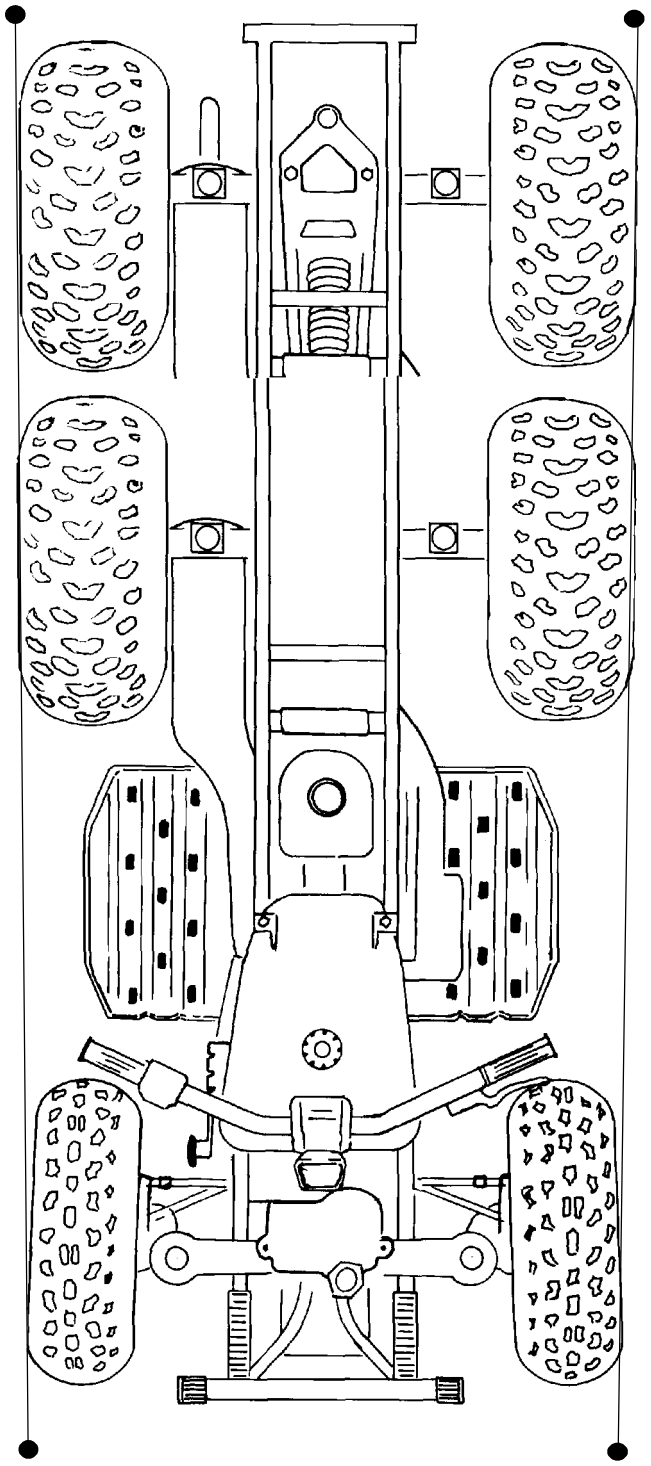
CAMBER AND CASTER

The camber and caster are non-adjustable.

METHOD 1: STRAIGHTEDGE OR STRING

Be sure to keep handlebars centered. See note below.

NOTE: String should just touch side surface of rear tire on each side of machine.



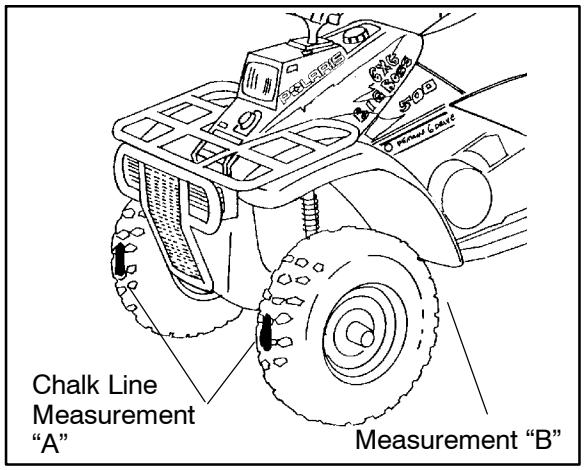
Measure from string to rim at front and rear of rim.

Rear rim measurement should be 1/16″ to 1/8″ (.2 to .3 cm) more than front rim measurement.

NOTE: The steering post arm (frog) can be used as an indicator of whether the handlebars are straight. The frog should always point straight back from the steering post.

METHOD 2 CHALK

1. Place machine on a smooth level surface.
2. Set handlebars in a straight ahead position and secure handlebars in this position. **NOTE:** The steering frog can be used as an indicator of whether the handlebars are straight. The frog should always point straight back from the steering post.
3. Place a chalk mark on the face of the front tires approximately 10″ (25.4 cm) from the floor as close to the hub/axle center line as possible. **NOTE:** It is important that both marks be equally positioned from the ground in order to get an accurate measurement.
4. Measure the distance between the marks and record the measurement. Call this measurement “A”.



5. Rotate the tires 180° by moving vehicle forward or backward. Position chalk marks facing rearward, even with the hub/axle centerline.
6. Again measure the distance between the marks and record. Call this measurement “B”. Subtract measurement “B” from measurement “A”. The difference between measurements “A” and “B” is the vehicle toe alignment. The recommended vehicle toe tolerance is 1/8″ to 1/4″ (.3 to .6 cm) toe out. This means the measurement at the front of the tire (A) is 1/8″ to 1/4″ (.3 to .6 cm) wider than the measurement at the rear (B).

TOE ALIGNMENT ADJUSTMENT

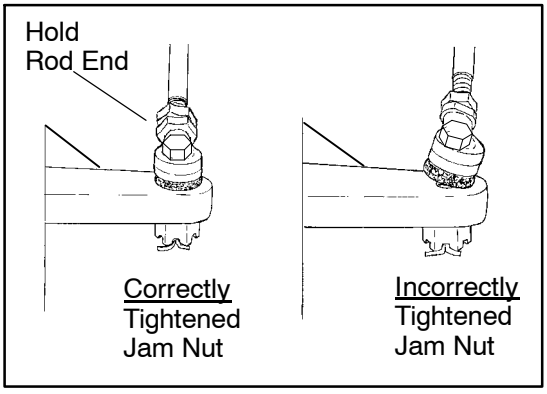
7. If toe alignment is incorrect, measure the distance between vehicle center and each wheel. This will tell you which tie rod needs adjusting. **NOTE:** Be sure handlebars are straight ahead before determining which tie rod(s) need adjustment.

CAUTION: During tie rod adjustment it is very important that the following precautions be taken when tightening tie rod end jam nuts. If the rod end is positioned incorrectly it will not pivot, and may break.

To adjust toe alignment:

- Hold tie rod end to keep it from rotating.
- Loosen jam nuts at both end of the tie rod.
- Shorten or lengthen the tie rod until alignment is as required to achieve the proper toe setting as specified in Method 1 (1/16″ to 1/8″) or Method 2 (1/8″ to 1/4″).
- **IMPORTANT:** When the tie rod end jam nuts are tightened, be sure to hold tie rod ends so they are parallel with the steering arm or the steering frog, respectively, to prevent rod end damage.

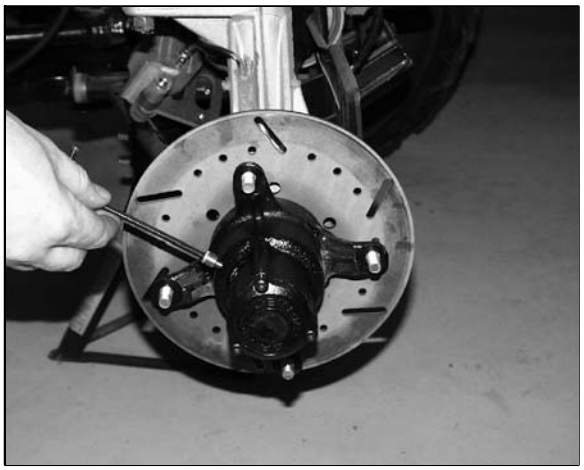
8. After alignment is complete, torque jam nuts to 12-14 ft. lbs. (1.66-1.93 kg-m).



FRONT HUB FLUID LEVEL INSPECTION

To check front hub fluid:

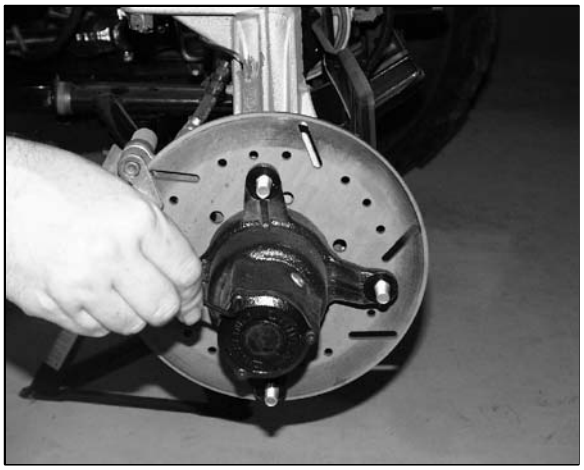
1. Place vehicle on a level surface.
2. Turn wheel until front hub fill/check plug is in either the 4:00 or 8:00 position.
3. Remove fill/check plug.
4. Add Polaris Demand Drive Hub Fluid if necessary until fluid trickles out. **NOTE:** Do not force the fluid into the hub under pressure or seal damage may occur.
5. Reinstall plug.
6. Repeat procedure for other hub.



FRONT HUB FLUID CHANGE

1. Place a drain pan beneath the hub.
2. Remove (3) screws and hub cap. Pry equally in notches provided until cap is removed.
3. Allow fluid to drain completely.
4. Inspect hub cap O-rings for nicks, cuts or abrasions. Replace if necessary.
5. Remove check/fill plug.
6. Reinstall the hub cap. **NOTE:** The check/fill plug must be removed before reinstalling the hub cap.
7. Turn wheel until front hub fill/check plug is in either the 4:00 or 8:00 position.
8. Add Polaris Demand Drive Hub Fluid until fluid trickles out. **NOTE:** Do not force the fluid into the hub under pressure or seal damage may occur.

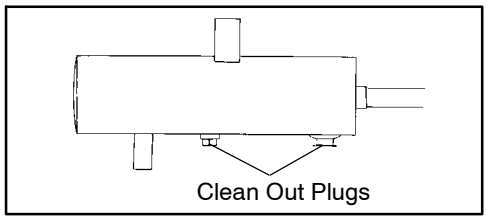
Polaris Demand Drive Hub Fluid:
PN 2871654 - 8 oz..
PN 2872277 - 2.5 gallon



EXHAUST PIPE

The exhaust pipe must be periodically purged of accumulated carbon as follows:

1. Remove the clean out plugs located on the bottom of the muffler as shown at right.
2. Place the transmission in neutral and start the engine. Purge accumulated carbon from the system by momentarily revving the engine several times.
3. If some carbon is expelled, cover the exhaust outlet and rap on the pipe around the clean out plugs while revving the engine several more times.
4. If particles are still suspected to be in the muffler, back the machine onto an incline so the rear of the machine is one foot higher than the front. Set the parking brake and block the wheels. Make sure the machine is in neutral and repeat steps 2 and 3. **WARNING:** SEE BELOW.
5. If particles are still suspected to be in the muffler, drive the machine onto the incline so the front of the machine is one foot higher than the rear. Set the parking brake and block the wheels. Make sure the machine is in neutral and repeat steps 2 and 3. **WARNING:** SEE BELOW.
6. Repeat steps 2 through 5 until no more particles are expelled when the engine is revved.
7. Stop the engine and allow the arrestor to cool.
8. Reinstall the clean out plugs.


Clean Out Plugs

⚠ WARNING

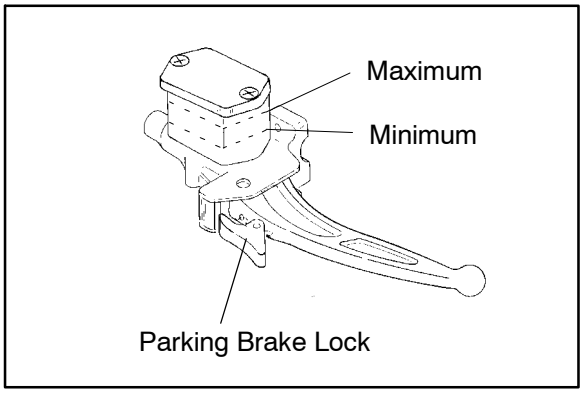
- Do not perform this operation immediately after the engine has been run because the exhaust system becomes very hot.
- Because of the increased fire hazard, make sure that there are no combustible materials in the area when purging the spark arrestor.
- Wear eye protection.
- Do not stand behind or in front of the vehicle while purging the carbon from the spark arrestor.
- Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas.
- Do not go under the machine while it is inclined.

Failure to heed these warnings could result in serious personal injury or death.

BRAKE SYSTEM INSPECTION

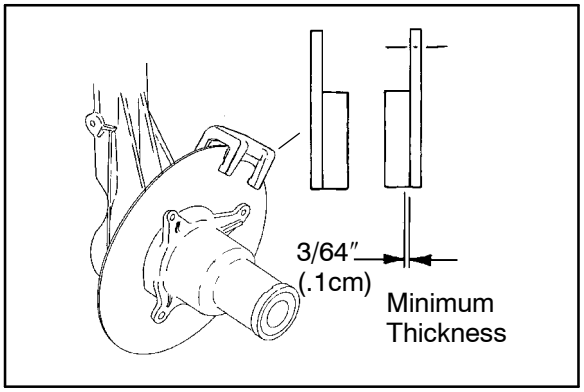
The following checks are recommended to keep the brake system in good operating condition. Service life of brake system components depends on operating conditions. Inspect brakes in accordance with the maintenance schedule and before each ride.

- Keep fluid level in the master cylinder reservoirs between “Min” & “Max” lines at all times.
- Use Polaris DOT 3 brake fluid (PN 2870990).
- Check brake system for fluid leaks.
- Check brake for excessive travel or spongy feel.
- Check friction pads for wear, damage and looseness.
- Check surface condition of the disc.
- Inspect thickness of brake pad friction material.



BRAKE PAD INSPECTION

- Pads should be changed when friction material is worn to 3/64″ (.1 cm), or about the thickness of a dime.



HOSE/FITTING INSPECTION

Check brake system hoses and fittings for cracks, deterioration, abrasion, and leaks. Tighten any loose fittings and replace any worn or damaged parts.

CENTER/FRONT DRIVE CHAIN SLACK ADJUSTMENT

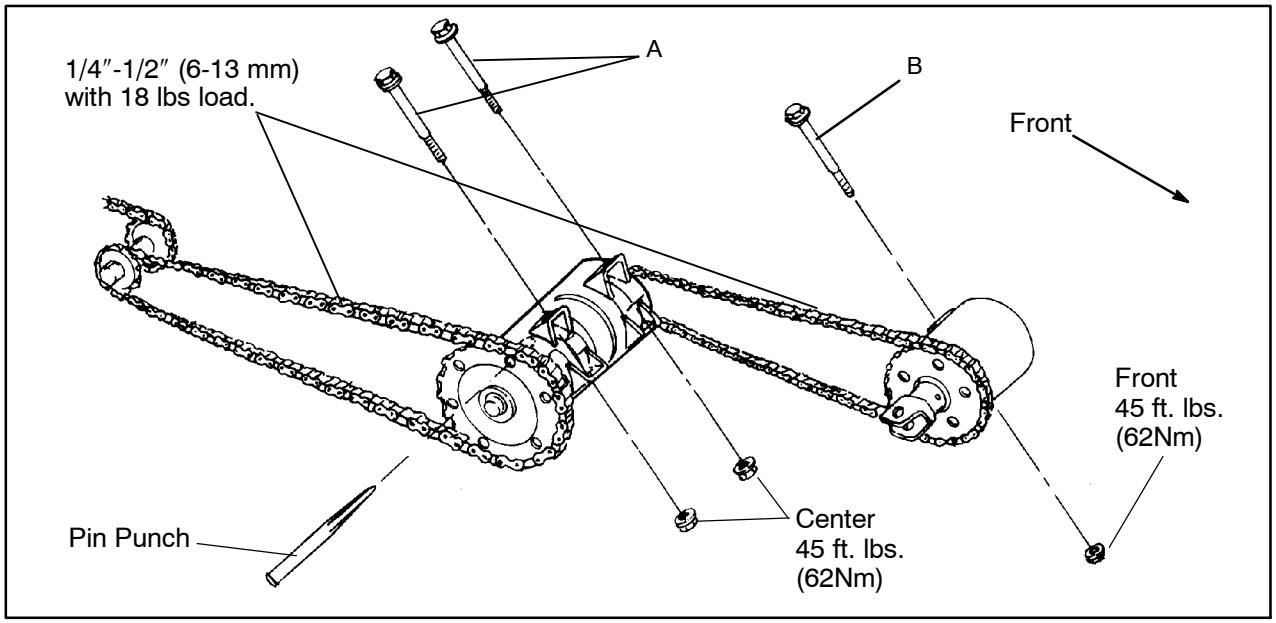
The center chain should be adjusted before the front chain. This adjustment affects the front chain slack.

CENTER/FRONT DRIVE CHAIN INSPECTION/ADJUSTMENT

1. Remove center chain guard attaching hardware. Press brake pedal downward and remove guard.
2. Remove forward chain guard attaching bolts and guard.
3. Loosen center chain eccentric clamp bolts (A).
4. Rotate vehicle forward or rearward until one of sprocket holes aligns with hole provided in eccentric.
5. Insert a large punch or screwdriver through sprocket and into eccentric hole. Rotate vehicle rearward to tighten chain. Chain deflection should be 1/4-1/2″ (6-13 mm) with 18 lbs. (8.18 kg) of force at center of chain.
6. Tighten eccentric clamp bolts to 45 ft. lbs. (62 Nm). **NOTE:** This does not include nut rolling torque. Check chain tension.
7. Loosen forward chain eccentric clamp bolt (B). Install punch as was done previously and adjust chain to 1/4-1/2″ (6-13 mm) with 18 lbs. (8.18 kg) force at center of chain.
8. Tighten forward eccentric clamp bolt to 45 ft. lbs. (62 Nm). **NOTE:** This does not include nut rolling torque. When this bolt is tightened the chain deflection may change. **CAUTION:** Do not over torque or eccentric bearing damage may occur. Check deflection and adjust again if needed.

Center and Front Drive Chain Adjustment:

1/4-1/2″ (6-13 mm) with 18 lbs. load (8.18 kg)



DRIVE CHAIN INSPECTION/ADJUSTMENT

CAUTION:

Never adjust or operate the vehicle with the rear drive chain slack out of the specified range, as severe damage to the transmission and drive components can result.

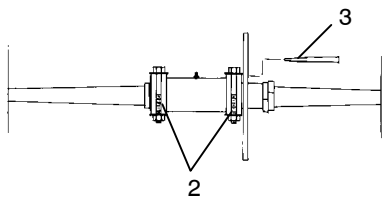
CHAIN INSPECTION

Check the amount of chain slack by moving the vehicle slightly forward to gain slack at the top side of the chain. Then pull up and down on the chain. Total slack should be as specified below. If slack is not within specification, adjust the chain.

MIDDLE AXLE CHAIN ADJUSTMENT

1. Loosen chain guard.
2. Loosen two eccentric locking bolts.
3. Insert a pin punch through the sprocket hub and into the eccentric axle housing.
4. Roll the vehicle ahead or back to adjust chain slack to the proper dimension. Correct chain slack adjustment is 1 1/4″ to 1 1/2″ (30-38 mm) total at the midpoint.
5. Roll the vehicle ahead and check tension in several places around the chain.
6. Tighten the eccentric locking bolts to 60 ft. lbs.
7. Reinstall chain guard.

Drive Chain Adjustment



NOTE: Reposition chain guide to allow 1/8″ (.3 cm) clearance between sprocket and guide.

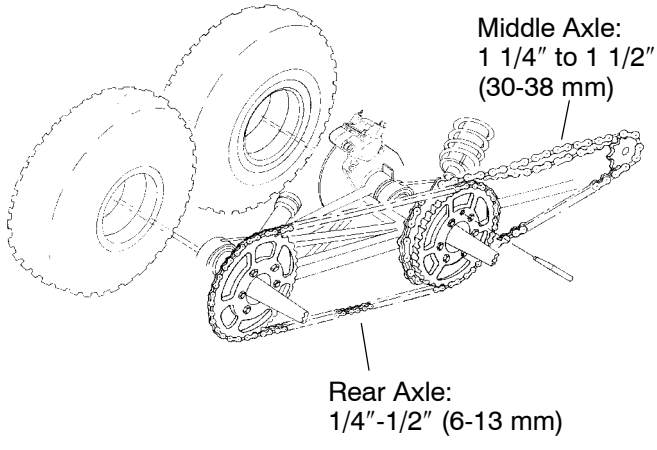
REAR AXLE DRIVE CHAIN ADJUSTMENT

To adjust the rear axle drive chain on 6x6 models, loosen the rear most eccentric and rotate using the same method as outlined for the middle axle chain. Total slack, however, should be adjusted to 1/4″-1/2″ (6-13 mm).

Chain Deflection

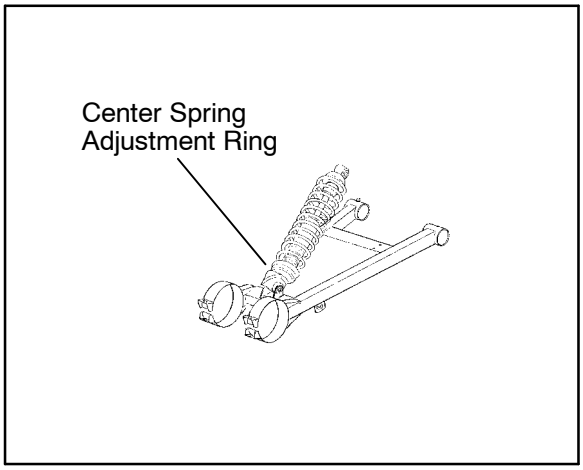
Middle Axle:
1 1/4- 1 1/2″(30- 38 mm)

Rear Axle:
1/4-1/2″(6-13 mm)



SUSPENSION SPRING PRELOAD ADJUSTMENT

Operator weight and vehicle loading affect suspension spring preload requirements. Adjust as necessary.



FRONT SUSPENSION

Compress and release front suspension. Damping should be smooth throughout the range of travel.

Check all front suspension components for wear or damage.

Inspect front strut cartridges for leakage.

CENTER/REAR SUSPENSION

Compress and release rear suspension. Damping should be smooth throughout the range of travel.

Check all rear suspension components for wear or damage.

Inspect shock for leakage.

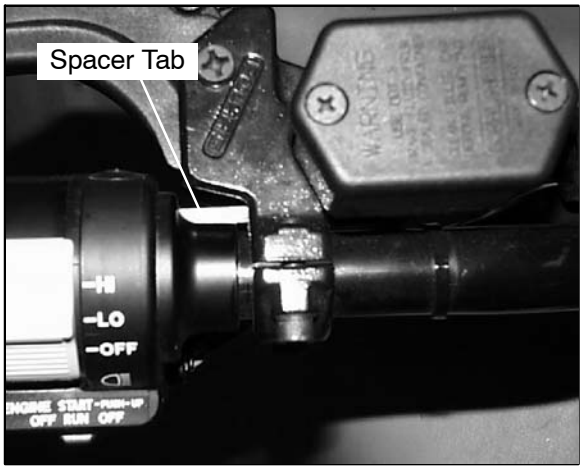
Shock Spanner Wrench

PN 2870872

CONTROLS

Check controls for proper operation, positioning and adjustment.

Brake control and switch must be positioned to allow brake lever to travel throughout entire range without contacting switch body.



WHEELS

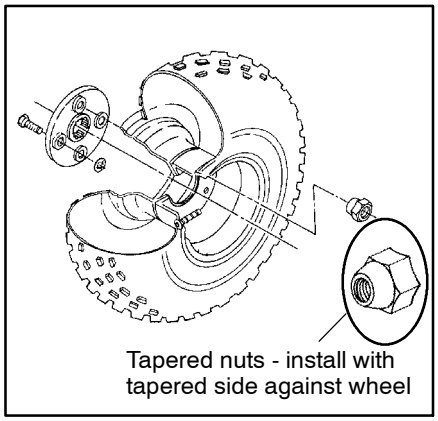
Inspect all wheels for runout or damage. Check wheel nuts and ensure they are tight. Do not over tighten the wheel nuts.

WHEEL, HUB, AND SPINDLE TORQUE TABLE

Item	Specification
Front Wheel Nuts	20 Ft. Lbs.
Rear Wheel Nuts	50 Ft. Lbs.
Front Spindle Nut	Refer to procedure listed in Chapter 7
Rear Hub Retaining Nut	80 Ft. Lbs.

WHEEL REMOVAL FRONT OR REAR

1. Stop the engine, place the transmission in gear and lock the parking brake.
2. Loosen the wheel nuts slightly.
3. Elevate the side of the vehicle by placing a suitable stand under the footrest frame.
4. Remove the wheel nuts and remove the wheel.


Tapered nuts - install with tapered side against wheel

WHEEL INSTALLATION

1. With the transmission in gear and the parking brake locked, place the wheel in the correct position on the wheel hub. Be sure the valve stem is toward the outside and rotation arrows on the tire point toward forward rotation.
2. Attach the wheel nuts and finger tighten them.
3. Lower the vehicle to the ground.
4. Securely tighten the wheel nuts to the proper torque listed in the table above.

CAUTION:

If wheels are improperly installed it could affect vehicle handling and tire wear. On vehicles with tapered rear wheel nuts, make sure tapered end of nut goes into taper on wheel.

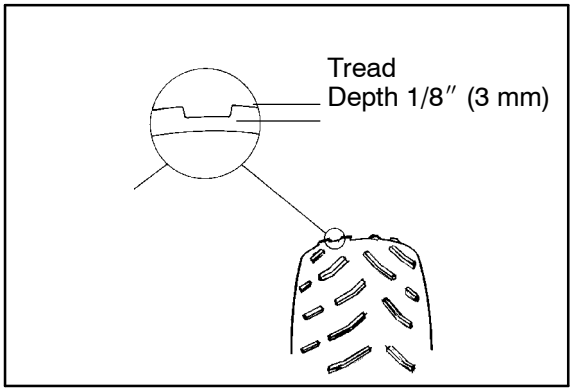
TIRE PRESSURE

Tire Pressure Inspection (PSI - Cold)		
Front	**Center**	**Rear**
5	5	5

TIRE INSPECTION

CAUTION:

- Maintain proper tire pressure. Refer to the warning tire pressure decal applied to the vehicle.
- Improper tire inflation may affect ATV maneuverability.
- When replacing a tire always use original equipment size and type.
- The use of non-standard size or type tires may affect ATV handling.



Tire Tread Depth

Always replace tires when tread depth is worn to 1/8″ (3 mm) or less.

⚠ WARNING

Operating an ATV with worn tires will increase the possibility of the vehicle skidding easily with possible loss of control.

Worn tires can cause an accident.

Always replace tires when the tread depth measures 1/8″ (.3 cm) or less.

FRAME, NUTS, BOLTS, FASTENERS

Periodically inspect the tightness of all fasteners in accordance with the maintenance schedule. Check that all cotter pins are in place. Refer to specific fastener torques listed in each chapter.

NOTES